

**STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES**

**In the Matter of the Board's Review of)
Unbundled Elements Rates, Terms Dkt. NO. TO00060356
and Conditions of Bell Atlantic)
New Jersey, Inc.)**

**DIRECT TESTIMONY
OF
JAMES A. ROTHSCHILD**

**ON BEHALF OF

DIVISION OF THE RATEPAYER ADVOCATE**

January 23, 2004

Direct Testimony of James A. Rothschild

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1 **I. STATEMENT OF QUALIFICATIONS OF JAMES A. ROTHSCHILD**

2

3 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

4 A. My name is James A. Rothschild and my address is 115 Scarlet Oak Drive,
5 Wilton, Connecticut 06897.

6

7 Q. WHAT IS YOUR OCCUPATION?

8 A. I am a financial consultant specializing in utility regulation. I have experience in the
9 regulation of electric, gas, telephone, sewer, and water utilities throughout the
10 United States.

11

12 Q. PLEASE SUMMARIZE YOUR UTILITY REGULATORY EXPERIENCE.

13 A. I am President of Rothschild Financial Consulting and have been a consultant since
14 1972. From 1979 through January 1985, I was President of Georgetown
15 Consulting Group, Inc. From 1976 to 1979, I was the President of J. Rothschild
16 Associates. Both of these firms specialized in utility regulation. From 1972
17 through 1976, Touche Ross & Co., a major international accounting firm,
18 employed me as a management consultant. Touche Ross & Co. later merged to
19 form Deloitte & Touche. Much of my consulting at Touche Ross was in the area of
20 utility regulation. While associated with the above firms, I have worked for various
21 state utility commissions, attorneys general, and public advocates on regulatory
22 matters relating to regulatory and financial issues. These have included rate of
23 return, financial issues, and accounting issues. (See Appendix 1.)

24

1 Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

2 A. I received an MBA in Banking and Finance from Case Western University (1971)
3 and a BS in Chemical Engineering from the University of Pittsburgh (1967).

4

5 **II. PURPOSE**

6

7 Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

8 A. The purpose of this testimony is to present forward-looking cost of capital data
9 that should be used by Verizon New Jersey for the determination of the proper
10 rates for UNE service.

11

12 **III. SUMMARY OF FINDINGS AND RECOMMENDATIONS**

13

14 Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

15 A. Following are my findings and recommendations in this proceeding. The basis for
16 each of these conclusions is explained in detail later in the testimony:

17 1.) The overall forward-looking cost of capital that is being incurred by
18 Verizon New Jersey to service its UNE investment is 7.10%. This is based upon
19 the consolidated capital structure of Verizon Communications, Inc. which contains
20 43.60% common equity, 9.30% short-term debt, 47.10% long-term debt. It is
21 also based upon a cost of common equity of 9.50%, a cost of long-term debt of
22 6.43%, and a cost of short-term debt of 1.14%. See JAR Schedule 1, Page 1.

23

1 2.) The actual capital structure financing the operations of Verizon New
2 Jersey, including the UNE investment, consists of 43.60% common equity 47.10%
3 long-term debt and 9.30% short-term debt. This capital structure is the actual
4 consolidated capital structure of Verizon Communications, Inc, the parent of
5 Verizon New Jersey. This consolidated capital structure is the only capital
6 structure that was directly chosen by management to minimize the overall cost of
7 capital in providing telecommunications service, and is the capital structure used by
8 rating agencies such as Standard & Poor's. The reported capital structure of
9 Verizon New Jersey does not represent the actual capital structure financing of
10 New Jersey regulated operations and it does not reflect the capital structure
11 management would choose if it were designing a capital structure that it believed to
12 be most appropriate for the regulated telephone operations in New Jersey. In
13 addition, the reported capital structure of Verizon New Jersey does not represent
14 the actual capital structure financing the operations of Verizon New Jersey because
15 all of the common equity and some of the debt that finances the operations of
16 Verizon New Jersey is issued by Verizon Communications, Inc.

17
18 3.) The cost of equity being incurred by Verizon New Jersey to service its
19 UNE investment is 9.50%. This conclusion was based upon the implementation of
20 the DCF method to the "All-Industry Average" for the 900 companies included in
21 the Business Week "Investment Outlook Scoreboard 2003," and to a group of
22 telecommunications companies. The conclusion was also based on the Risk
23 Premium/CAPM method.

24
25 4.) The non-diversifiable risk (the only kind of risk that affects the cost of
26 equity) is lower for the UNE business than for Verizon New Jersey as a whole.
27 The UNE business is pure incremental business to Verizon New Jersey, as it does

1 not make any incremental investment in order to be able to service the UNE
2 business (See Verizon's response to RAR-ROR-26). Furthermore, the retail
3 regulated customers, and not investors are the ones that pay for the risk of carrying
4 spare capacity. Even though the risks of providing UNE service are lower than for
5 Verizon's retail regulated telephone business, I have not specifically made any
6 downward adjustment to my cost of capital recommendation to account for the
7 lower risk

8
9 5.) If strict adherence to purely competitive pricing were followed for Verizon
10 New Jersey's UNE investment, my cost of capital recommendation would be
11 substantially lower than the 7.10% I have recommended. This is because Verizon
12 New Jersey treats UNE services as a by-product rather than a product that is
13 made intentionally. UNE service is a byproduct because, as acknowledged in
14 response to RAR-ROR-26 and RAR-ROR-34, Verizon New Jersey does not
15 make any incremental investment to service its UNE customers. UNE revenues
16 are purely incremental revenues. If there were a sufficient number of providers of
17 UNE services in all service territories, all service providers would be anxious to be
18 the one to earn the incremental revenues. In such a situation where the incremental
19 investment is zero, any income that is earned would provide a bonus return that all
20 competitors would seek to obtain. Because this return would be a bonus
21 obtainable without any significant incremental investment, the return on a fully
22 allocated basis would be forced by competition to be lower than the overall cost of
23 capital.

1 I reserve the right to provide supplemental testimony based on my review
2 of all discovery responses and the voluminous documents referred to in various
3 responses to data requests.

4
5 IV. OVERALL COST OF CAPITAL

6
7 Q. WHAT IS THE FAIR COST OF CAPITAL TO APPLY TO VERIZON NEW
8 JERSEY'S INVESTMENT IN UNEs?

9 A. As shown in JAR Schedule 1, Page 1, the overall cost of capital that is proper to
10 apply to Verizon New Jersey's UNE investment is 7.10%. This consists of a cost
11 of equity of 9.50%, a current cost of long-term debt of 6.06%, a current cost of
12 short-term debt of 1.14%. It is also based upon the actual capital structure of
13 Verizon Communications Inc., which consists of 43.60% common equity, 47.10%
14 long-term debt and 9.30% short-term debt.

15
16 Q. IS USING THE ACTUAL CAPITAL STRUCTURE OF VERIZON
17 COMMUNICATIONS FORWARD-LOOKING AND TELRIC
18 COMPLIANT?

19 A. Yes. The actual capital structure of Verizon Communications contains a
20 conservatively high estimate of the amount of common equity that Verizon
21 Communications should be expected to utilize in the future. The lower interest
22 rates that prevail today mean that as the embedded cost of debt comes down, the
23 company will be able to carry an increasing amount of debt without having its
24 interest expense increase.

1 **V. CAPITAL STRUCTURE**

2

3 Q. YOU HAVE RECOMMENDED THAT THE CONSOLIDATED CAPITAL
4 STRUCTURE OF VERIZON BE USED TO MEASURE THE ACTUAL COST
5 OF CAPITAL ASSOCIATED WITH VERIZON NEW JERSEY'S
6 PROVISION OF UNE SERVICES. WHAT IS THAT CAPITAL
7 STRUCTURE?

8 A. As of 9/30/2003, the actual capital structure of Verizon Communications, Inc.
9 consolidated consisted of 43.60% common equity. My source for this capital
10 structure information is the 3rd quarter 2003 10 Q report of Verizon
11 Communications as submitted to the U.S. Securities and Exchange Commission.

12

13 Q. IN DETERMINING THE ACTUAL CAPITAL STRUCTURE, DID YOU USE
14 A SPOT VALUE OR AN AVERAGE VALUE FOR SHORT-TERM DEBT?

15 A. The balance of short-term debt generally fluctuates. Therefore, it is common
16 practice to base the short-term debt percentage of capital structure by basing it on
17 the average value of short-term debt rather than a spot value. My Schedule JAR-
18 1, P. 2 shows that the balance of short-term debt I used was 9.30% of capital as
19 of 9/30/03. This was lower than the 10.79% of capital as of 12/31/02. The
20 balance available to me was computed from the \$7,499,000,000 balance of "Debt
21 Maturing in 1 Year". It is possible that some of this debt maturing in one year is
22 not really short-term debt. It is also possible that using a longer-term average of
23 short-term debt would alter this amount. So that I could provide the BPU with a
24 more accurate reflection of the short-term debt being used by Verizon
25 Communications, I asked the Company to provide monthly balance sheets so that
26 the monthly average balance of short-term debt in RAR-ROR-2. The Company
27 answered the interrogatory by referencing an SEC website that does not contain

1 the requested information. I recommend that the BPU require Verizon to provide
2 the requested answer to RAR-ROR-2 so that the capital structure used to
3 compute the overall cost of capital of the Company can be based upon the average
4 balance of short-term debt rather than the period-end balance.

5

6 Q. WHY SHOULD THE COMMISSION USE THE VERIZON
7 COMMUNICATIONS CONSOLIDATED CAPITAL STRUCTURE FOR
8 COST OF CAPITAL AND EARNINGS TESTING PURPOSES?

9 A. Ideally, the Commission should use the capital structure for Verizon New Jersey
10 that would produce the lowest overall cost of capital in the long-run¹ for the UNE
11 operations of Verizon New Jersey. It is a basic principle of finance that the lower
12 the business risk of a company, the greater amount of debt it can safely use in its
13 capital structure. When the level of debt is increased, there is a corresponding
14 decrease in the amount of equity. Business risk affects the amount of debt that a
15 company can carry prudently because debt payments must be made in accordance
16 with the contract (or bond indenture) in both good economic times and bad
17 economic times. If a company should fail to make its debt payments, the
18 company's bondholders could force the company into bankruptcy. Therefore, a
19 lower business risk lowers the chance that the company could experience problems
20 in making its debt payments.

21

22 Q. HOW DOES THE FORWARD-LOOKING NATURE OF THE CAPITAL
23 STRUCTURE SELECTION IN THIS PROCEEDING IMPACT YOUR

¹ Most companies with an investment bond rating could lower their overall cost of capital in the short-run merely by adding more debt. In the long-run, however, adding debt will only lower the overall cost of capital if the higher financial risk and the related higher cost of debt and equity associated with using more debt financing will not offset the cost benefits of replacing equity with debt.

1 DECISION TO USE THE CONSOLIDATED ACTUAL PER BOOKS
2 CAPITAL STRUCTURE OF VERIZON COMMUNICATIONS, INC?

3 A. The consolidated capital structure reflects management's choice as to the
4 appropriate capital structure. The consolidated capital structure is appropriate for
5 the regulated telecommunications operations of Verizon New Jersey because it
6 best reflects what management believes will produce the lowest overall cost of
7 capital in the long-run, and it is appropriate for UNEs because it is the capital
8 structure that best meets the forward-looking TELRIC compliant approach.

9

10 Q. DO THE CAPITAL STRUCTURE ACTIVITIES OF VERIZON NEW
11 JERSEY AFFECT THE CAPITAL STRUCTURE OF VERIZON
12 COMMUNICATIONS?

13 A. Yes. If Verizon New Jersey issues debt, then the debt shows up on the balance
14 sheets of both Verizon New Jersey and Verizon Communications, Inc. Therefore,
15 as the parent of Verizon New Jersey, Verizon Communications, Inc. has a vested
16 interest in the level of debt financing done by Verizon New Jersey. The more debt
17 financing done by Verizon New Jersey, the more equity Verizon Communications,
18 Inc. must have to keep its consolidated balance sheets in the desired capital
19 structure ratios.

20

21 Q. DOES VERIZON NEW JERSEY SELL ANY OF ITS OWN COMMON
22 STOCK TO THE PUBLIC?

23 A. No. All of the common equity of Verizon New Jersey is owned by Verizon
24 Communications, Inc. All of the common equity of Verizon New Jersey is raised
25 by Verizon Communications, Inc.

26

1 Q. IF VERIZON NEW JERSEY NEEDS MORE COMMON EQUITY, DOES
2 THIS MEAN VERIZON COMMUNICATIONS WILL RAISE MORE
3 EQUITY AND INVEST THAT EQUITY IN VERIZON NEW JERSEY?

4 A. No. When Verizon New Jersey needs new equity investment so that it has the
5 capital for future operations, it can only obtain that new equity investment from
6 Verizon Communications. However, in order to obtain the funds to make the new
7 equity investment in Verizon New Jersey, Verizon Communications often has
8 raised the money from investors by issuing debt, not equity. It is only through the
9 internal bookkeeping process that Verizon Communications debt can appear as if it
10 were equity when it gets to the books of Verizon New Jersey.

11 To elaborate, this is because when Verizon Communications makes an
12 equity investment in Verizon New Jersey, the investment appears on Verizon's
13 internal books as if it were an equity investment whether or not the real source of
14 the investment was debt or was equity.

15 Significantly, debt capital that is used to finance Verizon Communications
16 equity investment in Verizon New Jersey only appears as equity on the internal
17 books of Verizon New Jersey. Once the balance sheet of Verizon New Jersey is
18 consolidated with Verizon Communications other subsidiaries to form the
19 consolidated balance sheet of Verizon Communications, Inc., the portion of the
20 equity on the books of Verizon New Jersey that was actually financed with Verizon
21 Communications debt is removed from the total combined common equity balance
22 of Verizon Communications, Inc. However, if the only source of "equity" at the
23 subsidiaries owned by Verizon Communications, Inc. were actually the common
24 equity of Verizon Communications, Inc. (either equity raised by Verizon
25 Communications, Inc. through stock sales or the retention of earnings), then the
26 sum of the equity of the subsidiaries owned by Verizon Communications would
27 have no more equity than the sum of the total common equity balance of all of its

1 subsidiaries. In this case, when the sum of the common equity balances of the
2 subsidiaries of Verizon Communications are added together, the total equity is
3 considerably more than the total consolidated equity of Verizon. Because the sum
4 of the equity of the subsidiaries is more than the total equity on the books of
5 Verizon Communications, it is therefore apparent that Verizon Communications has
6 used its internal bookkeeping methods to re-categorize debt as equity for purposes
7 of reporting the capital structure of its subsidiaries.

8

9 Q. IF VERIZON COMMUNICATIONS USES ITS FUNDS TO BUY BACK
10 COMMON STOCK, WHAT IMPACT DOES THAT HAVE ON ITS
11 COMMON EQUITY BALANCE?

12 A. If Verizon Communications uses its funds to repurchase common stock, this
13 represents a transfer of funds from the company back to those stockholders who
14 decided to sell stock back to Verizon. The effect of such a transaction is, other
15 things being equal, for the level of common equity in the capital structure to decline
16 so there would be a higher percentage of debt rather than equity in the capital
17 structure. Company management uses stock buybacks to control the amount of
18 common equity on the company's balance sheet. However, because of the
19 accounting procedures selected by Verizon Communications, stock buybacks that
20 lower the level of common equity on the books of Verizon Communications, Inc.
21 have no influence whatsoever on the level of common equity reported on the books
22 of a subsidiary such as Verizon New Jersey for the reasons stated above.

23

24 Q. HAS THE COMPANY ACKNOWLEDGED THAT A STOCK BUYBACK
25 THAT REDUCES THE LEVEL OF COMMON EQUITY ON THE BOOKS
26 OF VERIZON COMMUNICATIONS, INC. HAS NO IMPACT ON THE

1 BOOKS OF THE SUBSIDIARIES OWNED BY VERIZON
2 COMMUNICATIONS?

3 A. Yes. In response to RAR-ROR-55 Verizon New Jersey answered “no” to the
4 question “If Verizon Communications were to implement a stock buyback, would
5 this impact the balance sheet of Verizon New Jersey.” This is the answer given
6 even though a stock buyback in reality represents a reduction in the level of
7 common equity actually obtained from equity investors.

8

9 Q. IS VERIZON COMMUNICATIONS ABLE TO USE LESS COMMON
10 EQUITY IN ITS OTHER BUSINESSES BECAUSE OF THE HIGHER
11 EQUITY RATIOS AT ITS SUBSIDIARIES SUCH AS VERIZON NEW
12 JERSEY?

13 A. Yes. Therefore, unless regulators are thorough enough to see through to the true
14 capital structure dynamics, Verizon Communications has an incentive to keep more
15 equity on the balance sheet of Verizon New Jersey than is needed. By so doing, it
16 could possibly increase the revenues it is allowed to earn on its regulated
17 operations while still maintaining the full benefit of the regulated subsidiary equity
18 for its unregulated operations.

19 Q. IS IT GENERALLY ACCEPTED THAT BUSINESS RISK AFFECTS THE
20 PERCENTAGE OF BOOK EQUITY IN THE CAPITAL STRUCTURE THAT
21 A COMPANY SHOULD USE?

22 A. Yes.

23

24 Q. HAS THE CAPITAL STRUCTURE OF VERIZON NEW JERSEY BEEN
25 ESTABLISHED IN A FULLY ARMS-LENGTH MANNER?

26 A. No. Verizon New Jersey does not have any publicly outstanding common stock.
27 All of the publicly sold equity resides at the Verizon Communications consolidated

1 level. Therefore, at this level it is at least possible that the actual capital structure
2 reflects the capital structure that Verizon management believes will produce the
3 lowest overall cost of capital.

4

5 Q. IS THE ACTUAL CAPITAL STRUCTURE OF VERIZON
6 COMMUNICATIONS ALSO INFLUENCED BY BOTH THE NEW JERSEY
7 REGULATED AND THE OTHER BUSINESS ACTIVITIES OF VERIZON,
8 BOTH REGULATED AND UNREGULATED?

9 A. Yes. Since the New Jersey intrastate UNE operations of Verizon are at the lower
10 side of the risk spectrum, the higher risk of the remainder of Verizon
11 Communications businesses will put upward pressure on the level of common
12 equity in the capital structure. Therefore, whatever percentage of common equity
13 in the capital structure that is appropriate for Verizon Communications as a whole
14 will overstate the level of common equity in the capital structure that is proper for
15 the New Jersey intrastate regulated operations. Therefore, my recommendation of
16 using the consolidated capital structure of Verizon Communications, Inc. as the
17 capital structure for computing the actual earnings of Verizon New Jersey's
18 regulated intrastate operations and the cost of capital for Verizon New Jersey
19 should be viewed as a conservatively high level of common equity.

20

21 Q. WHEN YOU COMPUTED THE CAPITAL STRUCTURE OF VERIZON
22 COMMUNICATIONS, DID YOU USE THE ACTUAL ACCOUNTING
23 VALUE OF COMMON EQUITY OR THE MARKET VALUE OF
24 COMMON EQUITY?

25 A. I used the accounting book value. The accounting book value is the proper value
26 to use when evaluating how management actually raises capital, and how trade-off
27 computations are made to determine the overall cost of capital. Because

1 management is continually managing its capital structure, it is a reasonably accurate
2 look at what management believes is Verizon Communications most economical
3 capital structure. However, as previously stated, since current interest rates are
4 lower than embedded interest rates, as historical debt is replaced with current debt,
5 this will drive down the company's interest cost. The lower interest cost will drive
6 up the amount of debt the company can prudently carry. Therefore, in the current
7 environment, using the accounting book value capital structure produces a
8 conservatively high estimate of the forward-looking percentage of common equity
9 in the capital structure.

10

11 Q. IS THE ACCOUNTING BOOK VALUE APPROACH YOU ARE USING
12 CONSISTENT WITH STANDARD PRACTICE BY STATE REGULATORS?

13 A. Yes. I have been involved in numerous utility rate proceedings throughout the
14 United States for decades. In ALL of those cases in which I have testified where a
15 capital structure was determined, the various utility commissions have determined
16 the capital structure based upon the accounting book value of the company's
17 capital, not its market value as described below. In fact, the use of the accounting
18 book values to determine capital structure is rarely even made an issue. Moreover,
19 for the same reasons that it is improper to use market value capital structure for
20 traditional ratemaking, it is also improper to use a market value capital structure for
21 a forward-looking capital structure determination as explained below.

22

23 Q. HOW DOES THE MARKET VALUE APPROACH TO DETERMINING
24 CAPITAL STRUCTURE DIFFER FROM USING THE ACCOUNTING
25 BOOK VALUE?

26 A. For determining capital structure, a large difference would generally be caused by
27 using the market price of the common stock rather than the actual investment made

1 in the company by investors. The book value investment fully reflects the actual
2 investment made by equity investors in a company because it includes both the
3 original invested capital and retained earnings. The market value of the common
4 stock is simply the stock price multiplied by the number of shares outstanding.

5

6 Q. IF THE MARKET VALUE OF CAPITAL RATHER THAN THE BOOK
7 VALUE OF CAPITAL WERE USED TO DETERMINE CAPITAL
8 STRUCTURE, WOULD THERE BE ANY OTHER NECESSARY
9 CHANGES?

10 A. Yes. If the BPU were to use a market value capital structure approach, then this
11 would mean that it would be including increases or decreases in the stock price as
12 part of the funds provided by investors. If increases (or decreases) in common
13 equity are included in the capital structure determination, then increases (or
14 decreases) in the stock price would also have to be included as part of the income
15 included on the company's income statement.

16

17 Q. IS CAPITAL STRUCTURE AN IMPORTANT CONSIDERATION IN THE
18 BOND RATING PROCESS?

19 A. Yes.

20

21 Q. WHAT CAPITAL STRUCTURE IS USED BY RATING AGENCIES SUCH
22 AS MOODYS AND STANDARD AND POOR'S WHEN EVALUATING
23 THE BOND RATING?

24 A. They use the actual book capital structure, not the market value capital structure.
25 Contrary to what Verizon New Jersey states in its response to RAR-ROR-13,
26 rating agencies do view debt ratios as a prime consideration in determining the
27 credit rating. This can be seen by viewing the currently available issue of

1 “Corporate Ratings Criteria” available on the Standard & Poor’s website. Page
2 17 of this document lists capital structure as one of the primary items considered in
3 its ratings process. Furthermore, beginning on page 22 of this document, there is
4 an entire section entitled “Capital structure/leverage and asset protection”.
5 Nowhere in the entire document is any reference made to market value capital
6 structure.

7 An additional confirmation of the importance of the book value capital
8 structure to the rating process for Verizon New Jersey may be seen by reviewing
9 the Standard & Poor’s reports provided by Verizon New Jersey in response to
10 RAR-ROR-4. Page 6 of the provided Standard & Poor’s report on Verizon
11 specifically notes the total debt reduction as an important issue under Financial
12 Policy. Additionally, under financial profile, there is a specific section entitled
13 “Capital Structure”.

14 Q. IS THE MARKET BASED CAPITAL STRUCTURE OF ANY USE
15 WHATSOEVER?

16 A. A market based capital structure has no use in determining the overall cost of
17 capital because it does not show how company management would raise capital if
18 they were raising all of the capital today for future use. While a regulated company
19 has the responsibility to provide safe and adequate service at the lowest possible
20 cost, a competitive company must do this also in order to effectively compete and
21 an important cost that these telecommunications companies both incur (i.e.,
22 whether or not they are regulated) is the cost of capital. The cost of capital can be
23 minimized by properly selecting the mix of debt and equity. Equity costs more than
24 debt, especially after considering that (unlike debt) the return on equity requires an
25 allowance for income taxes. However, if too little equity is used, then the cost of
26 debt and the cost of equity both increase. Rating agencies not only influence the
27 cost of debt but also tend to reflect the way that bond investors think. Rating

1 agencies examine book value capital structures when evaluating a capital
2 structure's appropriateness for any particular rating. Furthermore, book value
3 capital structures are an important barometer of cash flow because depreciation
4 expense is a function of a company's book value capital structure, not its market
5 value capital structure. Depreciation expense is an important source of cash flow
6 to a company, and cash flow is yet another important determinant of a bond rating.

7 Moreover, since the TELRIC standard is used to arrive at the forward-
8 looking capital structure that should be in-place today and since management uses
9 book value rather than market value ratios to design the capital structure, the re-
10 evaluation of what capital structure management should use is best determined by
11 examining what capital structure management is indeed using. The current capital
12 structure is much more than just an appendage of history as through tools such as
13 dividend policy, repurchasing new stock or selling new stock, repurchasing debt or
14 selling new debt, and using short-term debt lines of credit. The company has
15 substantial control over what is its current book value capital structure.
16 Conversely, a market value capital structure is not used by rating agencies, is not
17 the forward-looking capital structure used by management to decide whether the
18 next sale of capital should be debt or equity, and is therefore not indicative of the
19 capital structure that management would use to decide how to fund a new UNE
20 investment today or in the near future.

21
22 Q. IS IT PROPER TO USE A MARKET VALUE CAPITAL STRUCTURE TO
23 DETERMINE THE OVERALL COST OF CAPITAL FOR A COMPANY
24 SUCH AS VERIZON?

25 A. No, not unless the concept of the cost of equity is examined from a completely
26 different perspective than the BPU has ever done in any prior utility rate
27 proceeding I have ever seen. The cost of equity applicable to a market value

1 capital structure is a very different concept than the cost of equity that is derived
2 from a DCF model. The inconsistency between a market value capital structure
3 and the DCF cost of equity is so substantial that it is easy to observe. Consider the
4 following aggregate financial facts about the 900 largest companies in the United
5 States that were obtained from a recent Business Week article²:
6

² Page 133 of the December 29, 2003 issue of Business Week from a table entitled “Investment Outlook Scoreboard 2003. Here are the numbers to help you size up 900 companies”. Copy of entire table is attached to this testimony as Appendix 4.

1	Actual Market Value	\$12.1 trillion
2	Actual Return on Book Equity	15.4%
3	Actual Return on Market Equity	4.13% ³
4	Actual Market-to-book ratio	3.73
5	Actual earnings	0.50 trillion ⁴

6

7

8 Given the above facts, consider the following:

9

10 1.) If the cost of equity was determined to be 10.0% and this 10.0% was
11 allowed on the market value of equity, then the allowed earnings based upon this
12 10% would become \$1.21 trillion (\$12.1 trillion of market value x 10.0% cost of
13 equity). This \$1.21 trillion of earnings requirement is over twice times as high as
14 the actual earnings.

15 2.) If the unrealistically high cost of equity of 12.03% before the leasing risk
16 premium as recommended by Dr. Vander Weide on page 10 of his testimony is
17 used instead of the 10.0%, the inconsistency only becomes worse. A 12.03%
18 “cost” of equity if applied to the market value results in an earnings requirement of
19 \$1.45 trillion (\$12.1 trillion market value x 12.03% “cost” of equity) which is
20 almost three times as high as actual earnings.

21

22 The above example conclusively shows that if a market value capital
23 structure were used in conjunction with a DCF cost of equity, actual earnings for

³ Actual return on book equity of 15.4% divided by actual market-to-book ratio of 3.73.

⁴ Actual return on market equity of 4.13% x Actual Market Value of \$12.1 trillion.

1 the 900 companies in the Business Week article would at least double beyond the
2 levels that are currently being earned.

3

4 Q. IS THE STOCK PRICE OF THE BUSINESS WEEK 900 BASED UPON
5 HISTORIC ACTUAL EARNINGS OR FUTURE EXPECTED EARNINGS?

6 A. Future expected earnings. However, this does not explain the tremendous
7 inconsistency between the return on market that would result from implementing the
8 DCF model and the actual earnings rate. Further analysis shows that no rational
9 person could accept even this potential rebuttal to the analysis shown above. As
10 indicated above, the return on book equity on which the Business Week numbers
11 were based was 15.4%. Business Week also shows that the analysts' consensus
12 growth rate over the next 3-5 years for these 900 companies averages 12.0%. A
13 shown on Schedule JAR 3, P. 4, even if we accept this likely inflated analysts
14 growth rate number, the return on book equity for these 900 companies would be
15 15.53% in 5 years.

16

17 Q. YOU ARE USING MARKET BASED CAPITAL STRUCTURE AND TOTAL
18 RETURN ON MARKET CAPITALIZATION INTERCHANGEABLY. IS
19 THIS PROPER?

20 A. In the context I am using these numbers, it is proper to use the concept
21 interchangeably. The market value from the Business Week article is defined as
22 "Share price on November 28, 2003, multiplied by the latest available common
23 shares outstanding." In other words, the market value does not include the value of
24 debt securities. The only reason a capital structure containing both debt and equity
25 is used is to produce a weighted cost of capital that would be applicable to assets
26 that are financed both by debt and by common equity. If the assets that are
27 financed by debt are excluded from the base upon which the return is being

1 examined (which is the case in the Business Week article), then including the return
2 on debt is unnecessary.

3

4 Q. DO THE ABOVE NUMBERS SHOW ANY OTHER VIOLATIONS OF
5 BASIC FINANCIAL PRINCIPLES IF THE DCF-DERIVED COST OF
6 EQUITY IS MISTAKENLY APPLIED TO A MARKET VALUE CAPITAL
7 STRUCTURE?

8 A. Yes. It is generally accepted concept that is supported by financial theory and
9 mathematics that when the market-to-book ratio of a company is above 1, the cost
10 of equity is less than the return expected on book equity. Yet, if the DCF result
11 were applied to the market value capital structure were used to determine the
12 return rate required by investors, the return rate would become much higher than
13 the return rate currently expected by investors. This is because the high market-to-
14 book ratio serves to amplify the required return on equity instead of reduce it as the
15 DCF model is supposed to work. In other words, using the DCF model result in
16 connection with a market-based capital structure rather than a book value capital
17 structure is similar to controlling the heat in a house with a thermostat that turns on
18 the heat when it is too hot, and turns off the heat when it is too cold.

19

20 Q. WHY IS IT THAT THE MARKET VALUE CAPITAL STRUCTURE IS
21 INCONSISTENT WITH THE DCF MODEL?

22 A. The DCF model is implemented by determining the present value of future
23 expected cash flows. Future cash flows are dependent upon both what a company
24 is able to earn on its current investment, and the return a company is able to earn
25 on reinvested funds. The problem with using a DCF cost of equity in conjunction
26 with a market value capital structure is that the use of a DCF-derived cost of equity
27 with a market value capital structure incorrectly assumes that a new start-up

1 company could reinvest new funds at the same book returns that give rise to
2 market prices even when market prices deviate widely from book value. The
3 greater the deviation between market price and book value, the less realistic it is
4 for a company to be able to reinvest new funds at the same rate of return on book
5 value that gave rise to the high market price.

6
7 Q. IF INVESTORS WERE TO FORM A NEW COMPANY TODAY THAT
8 WERE TO COMPETE ON AN EQUAL FOOTING WITH THE AVERAGE
9 OF THE 900 COMPANIES IN THE BUSINESS WEEK ARTICLE, WOULD
10 THE NEW STOCK SELL AT PRICES APPROXIMATING THE BOOK
11 VALUE OF THE 900 COMPANIES OR THE MARKET VALUE?

12 A. In theory, this new company could go out and sell stock at prices resembling the
13 current market value of the 900 companies. Assuming good management, and
14 ignoring start-up costs, the proceeds of that sale could then be reinvested in such a
15 way as to produce the same return on market price as is currently anticipated for
16 these 900 companies. A reasonable starting point for what this return on market
17 would be is the 4.13% return on market I showed in the above table. This 4.13%
18 would then have to be reduced substantially because:

19
20 1.) The new company would start out with all un-depreciated assets whereas
21 its older competition would have assets that would, on average, be depreciated
22 substantially more than 0%.

23 2.) The new company would have no accumulated deferred federal income
24 taxes, whereas its older competition would likely have substantial accumulated
25 provisions for deferred income taxes.

26 3.) The new company would have a higher annual provision for depreciation
27 expense because its new assets will, in most cases, be more expensive to purchase

1 than what was paid by its competition. In instances of some high-tech equipment
2 (including much telecommunications equipment) it is possible that the new
3 equipment might have a lower original cost than that being used by the competition.
4 If this is the case, the lower depreciation expense might partially offset the impact
5 of accumulated provision for depreciation and the accumulated provision for
6 deferred income taxes. However, the purpose of this analysis is to determine what
7 a new company with average risk could earn on its market price investment.
8 Therefore, the relevant impact of the depreciation expense is what it would be on
9 average for the 900 companies, not what it would necessarily be for any one
10 industry.

11
12 For the above reasons, the return on a market value capital structure that
13 should be expected by a company that starts up a new business with a business
14 risk equal to the average of the 900 companies should be materially less than the
15 4.13% market return derived from the numbers in Business Week.

16
17 Q. YOU EXPLAINED WHY A MARKET RETURN ANALYSIS OF THE 900
18 COMPANIES SHOULD NOT MAKE TELECOM-ONLY ADJUSTMENTS.
19 IS IT POSSIBLE TO REVIEW THE BUSINESS WEEK ARTICLE TO SEE
20 SPECIFICALLY WHAT THE MARKET RETURN WOULD BE ON AN
21 AVERAGE INVESTMENT IN TELECOM?

22 A. Yes. Page 161 of the same Business Week article that provides the information on
23 the 900 companies shows the results for the Telecommunications Services
24 component of the 900 companies. The return on telecom market value is

1 considerably less than for the 900 companies. In fact, if only the telecom industry
2 is examined, the return on market declines from 4.13% to less than 1%.⁵

3

4 Q. WOULD EITHER THE 4.13% MARKET RETURN FOR THE 900
5 COMPANIES OR THE LESS THAN 1% RETURN FOR THE TELECOM
6 INDUSTRY, IF ADJUSTED FOR THE FACTORS YOU NOTED, FORM
7 THE PROPER BASIS FOR THE COST OF EQUITY THAT SHOULD BE
8 ALLOWED AS AN OPPORTUNITY TO EARN ON A MARKET VALUE
9 CAPITAL STRUCTURE?

10 A. No. These numbers, even if adjusted, amount to actual return numbers without any
11 analysis of whether or not investors are willing to provide funds at these levels. In
12 order to determine the return rate demanded by investors, it is necessary to turn to
13 methods such as the DCF method or the risk premium method – methods that
14 determine the return on book equity a company must be able to earn in order to
15 attract capital on reasonable terms.

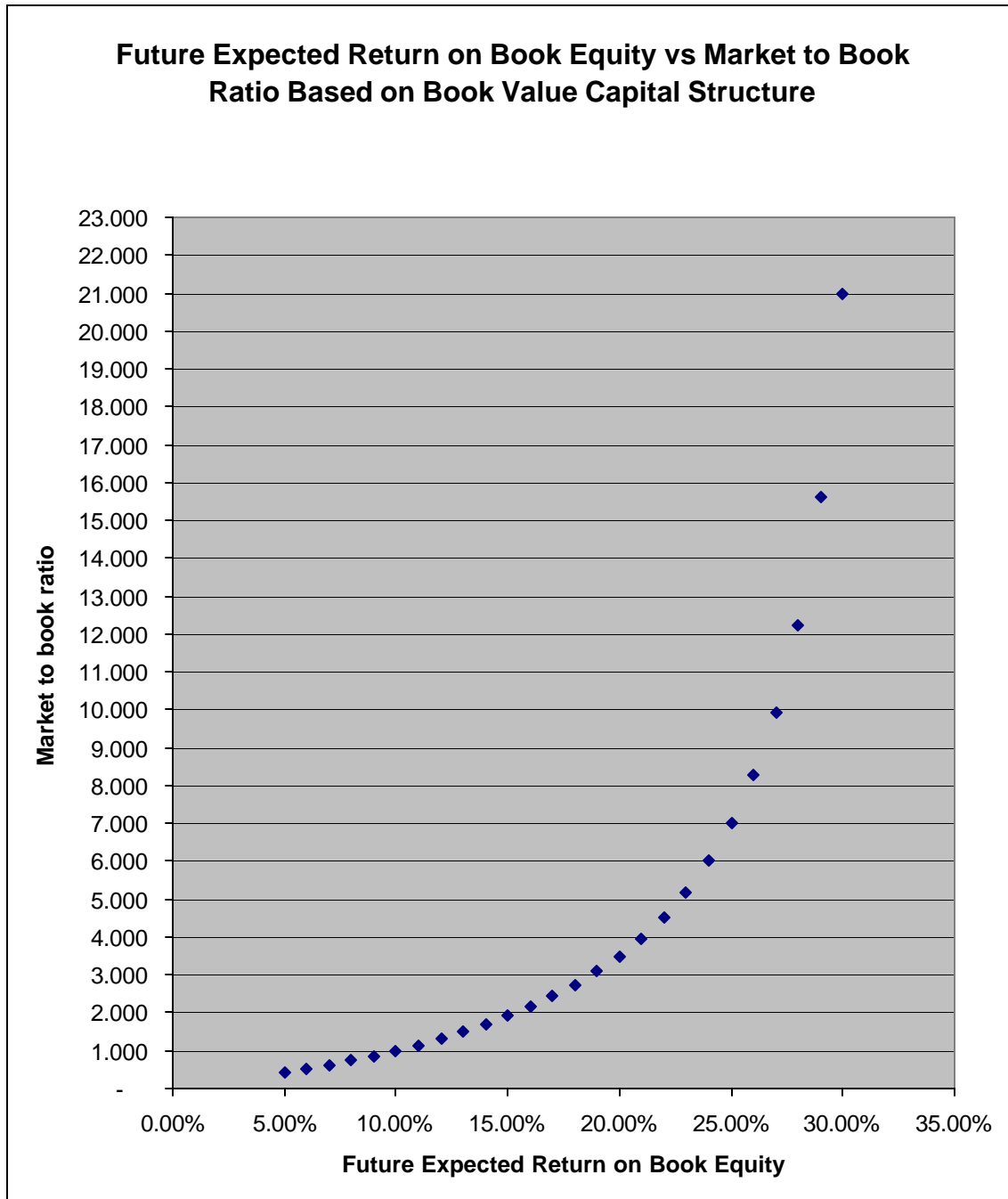
16

17 Q. CAN YOU PROVIDE AN ILLUSTRATION OF THE RELATIONSHIP
18 BETWEEN A COMPANY'S MARKET PRICE AND THE RETURNS
19 ANTICIPATED BY INVESTORS?

20 A. Yes. The intrinsic value of a company's common stock is a function of its ability to
21 provide the owners of its common stock with future cash flows. These cash flows
22 are provided to investors in the form of common dividends until the stock is sold,
23 and the proceeds from the sale of the stock once it is sold. Dividends are derived
24 from earnings. Earnings are achieved by a company from a company investing its

⁵ Business Week, December 21, 2003, page 161, 4.1% return on book equity divided by the 4.96 price to book ratio.

1 funds in assets that are put to productive use in the business. The better business
2 conditions, and the better management, the higher the returns a company will be
3 able to earn on its assets. The higher the return a company can earn on its assets,
4 the higher the rate of future cash flow a company will be able to provide its
5 investors on each dollar of investment. The relationship between the cost of a
6 company's assets that are financed by common stockholders and the market price
7 of a company's stock is often expressed as a company's market-to-book ratio.
8 The higher the sustainable returns, the more valuable investors perceive those
9 assets. Therefore the higher the sustainable return rate perceived by
10 stock investors, the higher the market-to-book ratio for a company. The DCF
11 method was used to mathematically derive the following graph:
12



1

2

3

4

5

6

The above graph was derived based upon the assumptions that a company or group of companies being examined has been determined by investors to have a cost of equity of 10% and an expected earnings retention rate equal to 30% of earnings. Other reasonable cost of equity numbers and retention rates could be

1 used. If these inputs were changed within reasonable bounds, the basic shape of
2 the above graph and the following observations would remain essentially the same.
3 Following are the observations:

4
5 1.) The earned return on book equity that is required to produce a market-to-
6 book of 1.0 is equal to the cost of equity.

7 2.) The relationship between the market-to-book ratio and the future
8 expected return on book equity is NOT linear. The market-to-book ratio
9 increases more and more rapidly as the future expected return on book equity
10 increases.

11
12 Q. IF A MARKET VALUE CAPITAL STRUCTURE IS USED, DOES A
13 HIGHER MARKET PRICE RESULT IN A HIGHER COMPUTED OVERALL
14 COST OF CAPITAL?

15 A. Yes.

16
17 Q. DOES THIS MAKE SENSE?

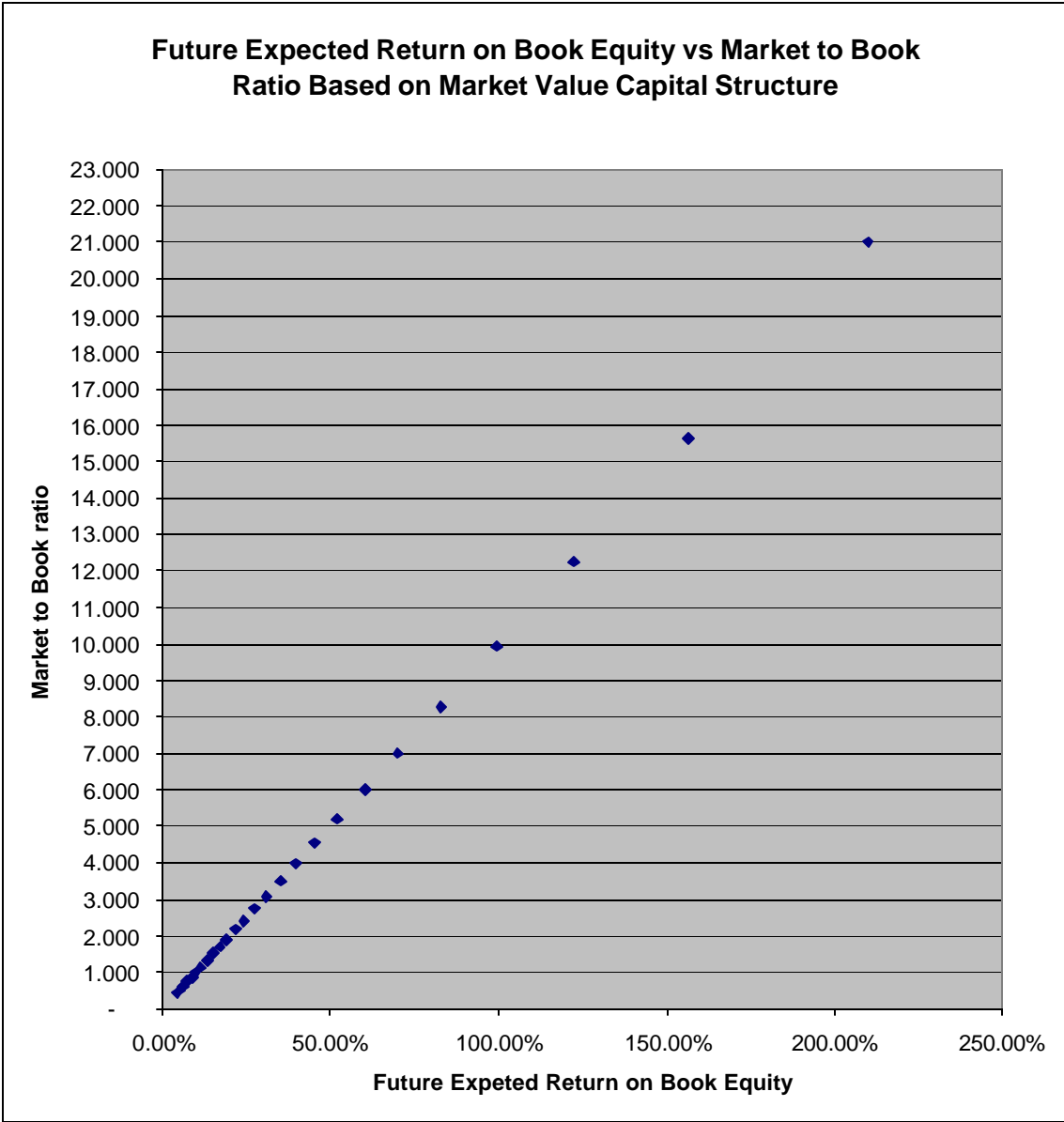
18 A. No. Other things being equal, investors respond to an increase in earnings
19 expectations by bidding up the stock price of a company. The higher stock price is
20 the way investors have of communicating that earnings expectations are HIGHER
21 than is needed to attract capital. Yet, if a market value capital structure is used, the
22 result of a higher stock price is for earnings requirements to go up higher and
23 higher.

24
25 Q. HAVE YOU PREPARED A GRAPH THAT SHOWS HOW EARNINGS
26 REQUIREMENTS ON BOOK VALUE ARE IMPACTED BY INCREASES

1 IN THE STOCK PRICE IF A MARKET VALUE CAPITAL STRUCTURE IS
2 USED TO DETERMINE THE OVERALL COST OF CAPITAL?

3 A. Yes.

4



5

6 The above graph shows that as the stock price increases (expressed as
7 market-to-book ratio), the future expected return on book equity would continue
8 to increase if a market value capital structure were used to determine the required
9 return on equity. Since the current market-to-book ratio of the telecom industry as

1 reported in Business Week is almost 5.0⁶, if a market value capital structure were
2 used, then the return on book would approximate 50%, or more than 5 times as
3 much as the BPU has allowed in recent cases. Even worse, the results of the prior
4 graph show that if the BPU were to set rates so high that investors began expecting
5 earned returns on book of approximately 50%, the market-to-book ratio would
6 climb even higher, thereby calling for a return on book considerably higher than
7 even the 50% return.

8

9 Q. IS IT PROPER RATEMAKING TO USE THE MARKET VALUE CAPITAL
10 STRUCTURE TO DETERMINE THE COST OF CAPITAL?

11 A. No. The issue of using the stock price as an input to the cost of capital has been
12 specifically addressed and specifically rejected by the U.S. Supreme Court in its
13 Hope Natural Gas decision.

14

15 “fair value” is the end product of the process of rate-making not the
16 starting point as the Circuit Court of Appeals held. The heart of the
17 matter is that rates cannot be made to depend upon “fair value” when
18 the value of the going enterprise depends on earnings under whatever
19 rates may be anticipated.⁷

20

21 Market Value is a “fair value” concept. Market Value of a company is
22 dependent upon the level of rates it is charging.

23

⁶ Business Week, December 29, 2003, P. 161.

⁷ *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 601 (1943).

1 **VI. COST OF DEBT**

2

3 Q. HOW HAVE YOU DETERMINED THE COST OF DEBT IN THIS
4 PROCEEDING?

5 A. Since the cost of capital that is being sought in this proceeding is the forward-
6 looking cost of capital, the cost of long-term debt was determined by setting it
7 equal to what it would cost Verizon New Jersey to issue debt today. That cost
8 rate is currently estimated to be 6.06%. I obtained the 6.06% by starting with the
9 4.89% cost of 30-year U.S. treasury bonds as reported on the BondsOnline
10 website. I then added the 1.17% interest rate spread (again from the BondsOnline
11 website) between U.S. treasury bonds and A2 rated corporate debt. This resulting
12 6.06% was then compared to the actual cost of a Verizon New York non-callable
13 bond that matures on 12/15/2030. The yield to maturity on this bond is 6.088%, a
14 number that confirms the reasonability of using the 6.06% interest rate I obtained
15 based upon the spread analysis. Verizon New York was used because that was
16 the only long-term bond issued by a Verizon regulated telephone company that
17 was reported in BondsOnline.

18 The cost of short-term debt was set to 1.14% based upon Verizon New
19 Jersey's response to RAR-ROR-3.. The cost of debt that I have proposed is
20 TELRIC compliant because it reflects forward-looking costs and it is the cost of
21 debt that would be incurred by a company that were now purchasing all new
22 equipment.

1 **VII. COST OF COMMON EQUITY**

2 A.) Introduction

3

4 Q. HOW DID YOU DETERMINE THE COST OF EQUITY, AND WHAT
5 WERE YOUR FINDINGS?

6 A. I determined the cost of equity to Verizon New Jersey by applying the Discounted
7 Cash Flow (DCF) method to both a group of telecommunications companies
8 consisting of former RBOC's and to the 900 companies tabulated by Business
9 Week. I also considered the results of the risk premium/CAPM model. Based
10 upon the analyses I conducted, I find that the cost of equity to Verizon New Jersey
11 and applicable to the consolidated capital structure of Verizon Communications is
12 9.50%. See JAR, Schedule 2. This recommendation is equally applicable to UNE
13 rates and to the regulated retail rates.

14

15 Q. HOW HAVE YOU IMPLEMENTED THE DCF METHOD AND THE RISK
16 PREMIUM/CAPM METHOD IN THIS CASE?

17 A. The details of how these methods were implemented are provided in JAR
18 Schedule 2 of this testimony.

19

20 Q. WHAT IS THE COST OF EQUITY?

21 A. The cost of equity is the rate of return that must be offered to a common equity
22 investor in order for that investor to be willing to buy the common stock. The rate
23 of return is earned in two different ways. One part of the return is from a dividend.
24 The other part of the return is through the change in the stock price. Investors buy
25 stock to benefit from the total return. Total return is the sum of the dividend
26 income and the profit (or loss) obtained from the change in the stock price. While

1 it is uncommon in the utility industry, many companies do not pay a dividend at all.
2 Yet, investors are willing to buy the stock if they feel that the likely capital
3 appreciation will offset the lack of any dividend income. Common equity investors
4 do not know with certainty what the stock price will be in the future. Also,
5 investors are not certain at what rate future dividends might be increased or
6 decreased. They also recognize that the possibility exists that dividends could be
7 totally eliminated. Therefore, common equity investment always entails risk, but the
8 risk can vary greatly from company to company.

9 The above description of the cost of equity might sound to some like a
10 description of the DCF method because it talks about dividend yield and stock
11 price appreciation. Perhaps a major part of the reason that the DCF method has
12 been so commonly used over the years is because, more than any other method, it
13 directly examines these factors that provide the incentive for investors to buy
14 common stock in the first place. The DCF method starts with the current dividend
15 yield, and adds to that dividend yield an estimate of growth to arrive at the
16 estimated cost of capital. This growth is really the estimate of the future capital
17 appreciation that investors are expecting. Dividend growth, book value growth,
18 and earnings growth, to the extent they may be used, are only relevant to the
19 degree they can help estimate stock price appreciation.

20 The risk premium method, which in a generic sense includes the CAPM
21 method, is also commonly used by witnesses in rate proceedings. The risk
22 premium/CAPM method is really measuring the very same thing as the DCF
23 method --- the total return expected by a common stock investor. Only rather
24 than determining this total return by directly estimating future dividends and capital
25 appreciation, the method is looking to either interest rates or the inflation rate to
26 help estimate what total return common stock investors want.

1 The return an investor cares about is best measured as the return on
2 market price. An investor who buys a common stock at \$10.00 per share and
3 sells it a year later for \$10.90 will have received a 9% return (plus dividends, if
4 any) irrespective of whether or not the company earned any money, and
5 irrespective of the return on book value. However, utility commissions have the
6 responsibility of balancing the interests of investors and ratepayers. Therefore, if it
7 can be determined that investors are willing to buy stock with the EXPECTATION
8 of being able to earn an annual return of 9%, then a commission should set rates so
9 that the return on used and useful rate base is at the level where the future return on
10 book value is expected to be 9%. If the market price should happen to be below
11 book value, this would NOT be justification for providing a lower return than the
12 cost of equity demanded by investors. If the market price should happen to be
13 above book value, this would NOT be justification for providing a higher return
14 than the cost of equity demanded by investors. As the U. S. Supreme Court found
15 in its decision in the Hope Natural Gas case (320 US 591-660), the stock price is
16 "... the end product of the process of rate-making not the starting point..." and
17 that "... the fact that the value is reduced does not mean that the regulation is
18 invalid."

1 B.) Summary of Conclusions on Cost of Equity

2

3 Q. WHAT IS THE COST OF EQUITY TO APPLY TO VERIZON-NEW
4 JERSEY'S UNE INVESTMENT?

5 A. The forward-looking cost of equity to Verizon is currently 9.50%. This is based
6 upon the results of both the DCF method and the risk premium/CAPM method.
7 See JAR Schedule 2. The growth rate derived in the DCF method gave some
8 weight to analysts' forecasts even though those forecasts are more optimistic than
9 the consensus of equity investors. Equity investors have suffered through
10 approximately three years of bad times caused at least in part by a continual string
11 of earnings disappointments particularly in the telecommunications industry.

12

13 Q. HOW DID YOU ARRIVE AT YOUR RECOMMENDED COST OF
14 EQUITY?

15 A. I reviewed the results of the DCF methods shown in JAR **Schedule 2**. The results
16 shown in JAR **Schedule 2** were developed from the Discounted Cash Flow, or
17 DCF, method and the risk premium/CAPM method. I applied only the constant
18 growth version of the DCF method.

19 The DCF cost of equity to comparative telephone companies is indicated
20 to be 8.48% to 9.30% depending upon whether average or end of period stock
21 prices are used. Telecommunications companies all have significant unregulated
22 businesses that are likely to have a higher cost of equity than the cost of equity for
23 the regulated portion of the telecommunications company's business.

24 As also shown on the bottom of JAR Schedule 2, the risk premium/CAPM
25 method is indicating a cost of equity of between 8.94% and 10.00%. I have
26 interpreted the results to be indicating a cost of equity of 9.50% for telephone

1 companies. I arrived at this result by considering the results of the DCF analysis as
2 well as the risk premium/CAPM method.

3
4 **VIII. UNE RISK**

5
6 Q. HOW DOES THE RISK ASSOCIATED WITH VERIZON NEW JERSEY'S
7 INVESTMENT IN THE UNE BUSINESS COMPARE WITH THE RISK
8 BORNE BY IT IN THE REGULATED RETAIL RATE BUSINESS?

9 A. The risk associated with Verizon New Jersey's provision of UNE service is lower
10 than the risk associated with the investment in retail regulated telephone rates. As
11 a result, Verizon's investment that is allocated to its UNE business requires a lower
12 return than the cost of capital to the regulated retail business and the regulated retail
13 business requires a lower rate of return than the consolidated Verizon
14 Communications, Inc or the other RBOCs in the comparative group of
15 telecommunications companies. Due to the speculative nature of quantifying actual
16 risk differentials, I have not recommended a lower return for the UNE business
17 than for the regulated retail business. It requires a lower return, but I have
18 recommended that the Verizon overall cost of capital be applied to Verizon New
19 Jersey's UNE investment. This recommendation is generous to Verizon New
20 Jersey, in that it tends to overstate the overall cost of capital to be applied in this
21 case.

22
23 Q. WHY IS THE RISK OF VERIZON NEW JERSEY'S REGULATED RETAIL
24 BUSINESS LOWER THAN THE RISK FOR VERIZON
25 COMMUNICATIONS, OR FOR THE COMPARATIVE GROUP OF
26 RBOCS?

27 A. The regulated retail business has, in the words of the U. S. Supreme Court an:

1 almost insurmountable competitive advantage not only in routing calls within the
2 exchange, but, through its control of this local market, in the markets for terminal
3 equipment and long-distance calling as well. A newcomer could not compete with
4 the incumbent carrier to provide local service without coming close to replicating
5 the incumbent's entire existing network, the most costly and difficult part of which
6 would be laying down the 'last mile' of feeder local loop, to the thousands (or
7 millions) of terminal points in individual houses and businesses... In an unregulated
8 world, another telecommunications carrier would be forced to comply with these
9 conditions, or it could never reach the customers of a local exchange.'⁸

10 The combination of the "insurmountable" difficulty of competitors building
11 facilities to compete with the regulated retail business and the basic, important
12 nature of telecommunications service makes the retail regulated portion of Verizon
13 Communications business in the low-end of the spectrum of risk. It is lower in risk
14 than Verizon Communications' other businesses that do have competition where
15 the barriers to entry are surmountable, and the service might serve a less basic
16 need.

17
18 Q. WHY DO YOU SAY THAT THE UNE BUSINESS OF VERIZON NEW
19 JERSEY IS EVEN LOWER IN RISK THAN THE RISK BORNE BY THE
20 RELATIVELY LOW-RISK REGULATED RETAIL TELEPHONE
21 BUSINESS?

22 A. The UNE business is only being provided by Verizon-New Jersey if the facilities to
23 provide that business are already available. When asked in interrogatory RAR-
24 ROR-26 part (c) "Has Verizon specifically made a separate network investment to
25 provide UNEs to CLECs that would not have been made except for the need to

⁸ Verizon v. FCC, 122 S. Ct. 1646, 1662 (May 13, 2002).

1 service CLECs?” Verizon New Jersey answer was no. Therefore, Verizon New
2 Jersey has not put any investment capital at risk to service UNEs. UNEs are only
3 offered if the equipment to service them was there already. Without having made
4 any investment, any income derived from servicing the UNEs is a return achieved
5 by Verizon New Jersey without the company having put any additional capital at
6 risk.

7 The UNE business actually REDUCES the risk of Verizon New Jersey
8 being in the regulated retail telephone business. As explained by the U.S. Supreme
9 Court:

10
11 The actual TELRIC rate charged to an entrant leasing the element would
12 be a fraction of the TELRIC figure, based on a “reasonable projection” of
13 the entrant’s use of the element (whether on a flat or per-usage basis) as
14 divided by aggregate total use of the element by the entrant, the incumbent,
15 and any other competitor that leases it.⁹

16
17 The above quote shows that the UNE rates are based upon the total
18 TELRIC average cost of providing service, while the existence of the UNE
19 business provides economies of scale. The economies of scale drive down the
20 average cost of not only Verizon New Jersey’s cost to provide UNE service, but
21 also drive down the average cost of the use of the facilities by its regulated retail
22 business. The lower the cost, the better Verizon New Jersey’s regulated business
23 is able to attract more business for the more discretionary services such as extra
24 computer access lines and fax lines.

⁹ Verizon v. FCC, 122 S. Ct. at 1665, n.16.

1 Verizon's investment in UNEs is further protected from risk because if
2 Verizon loses a retail customer to a CLEC, the facilities that the retail customer
3 was using are immediately resold by Verizon as a UNE sale. Hence, Verizon
4 continues to receive revenues for its facilities (although not as much as it would on a
5 retail basis) rather than losing revenues altogether.

6
7 Q. DOES THE LACK OF A LONG-TERM CONTRACT BETWEEN VERIZON
8 NEW JERSEY AND ITS UNE CUSTOMERS INCREASE VERIZON'S
9 RISK?

10 A. No. It increases the risk borne by its UNE customers because they cannot be
11 secure in the rates, terms and conditions under which they will be able to receive
12 service in the future. But, it does not increase Verizon New Jersey's risk. Given
13 the "insurmountable" task of a competitor duplicating the UNE services being
14 provided by Verizon New Jersey, should one wholesale customer for UNEs go
15 out of business, the retail customers serviced by that UNE customer would not be
16 lost to Verizon New Jersey. The retail customer would either switch to another of
17 Verizon's wholesale customers, or would begin buying service as a direct retail
18 customer of Verizon New Jersey.

19
20 Q. DOES THE REQUIREMENT OF VERIZON NEW JERSEY TO PROVIDE
21 UNE SERVICE TO ITS COMPETITORS IMPACT THE RISK OF VERIZON
22 NEW JERSEY?

23 A. Yes, there is a risk to the basic retail telephone business caused by the existence of
24 UNEs. Verizon New Jersey would undoubtedly prefer to not have the competition
25 to its retail business that is caused by UNEs. But, that risk is not properly allocable
26 to the UNE business, it is allocable to the regulated retail telephone business of

1 Verizon New Jersey because the regulated retail business must function in a
2 competitive environment. UNEs are just another competitor.

3 Verizon New Jersey would rather sell retail services than wholesale
4 services like UNEs because providing a retail service gives Verizon New Jersey an
5 opportunity to provide a greater proportion of the total telecommunications service.

6

7 Q. HOW DOES THE REQUIREMENT TO ESTABLISH UNE RATES BASED
8 UPON FORWARD-LOOKING COSTS, INCLUDING THE PRICING OF
9 SERVICES BASED UPON THE COST OF THE MOST MODERN
10 EQUIPMENT, IMPACT THE COST OF CAPITAL?

11 A. The requirement to establish rates for UNE service based upon forward-looking
12 costs means that instead of assigning the embedded cost of debt to the proper
13 capital structure, the current cost of debt should be used. The use of current costs
14 does not, however, change the appropriate capital structure determination. Just as
15 the cost of capital is determined when establishing regulated retail rates in a
16 traditional rate case, the forward-looking capital structure which is consistent with
17 what management would use in order to minimize the long-run forward-looking
18 overall cost of capital is the proper basis to quantify the overall cost of capital.

19

20 Q. DOES THE USE OF CURRENT EQUIPMENT COST RATHER THAN
21 EMBEDDED EQUIPMENT COST IMPACT THE COST OF CAPITAL RISK
22 ALLOWANCE?

23 A. No. Switching from using an embedded cost procedure to a current replacement
24 cost could involve reconsideration of many factors that are, for the most part,
25 unrelated to the cost of capital. In fact, the only factor that impacts the cost of
26 capital from a forward-looking cost perspective rather than an historic cost
27 perspective is the allowance for inflation. Traditionally, a company's investors are

1 provided with an allowance for inflation through the cost of capital. Cost of capital
2 is a logical place to provide the inflation allowance because investors' demanded
3 return on debt and equity demanded by investors includes an allowance for
4 inflation.

5 Part of the reason that telecommunications equipment changes in price over
6 time is the impact of inflation. Therefore, using the current cost of
7 telecommunications equipment rather than the embedded cost at the same time an
8 allowance for inflation is provided in the cost of capital could result in a double-
9 count. A double-count occurs because the cost of both debt and equity capital
10 already includes an allowance for inflation. An investor can appropriately receive
11 an allowance for inflation either as part of the cost of capital or as part of the
12 inflation in assets, not both. This is conceptually true even in a telecommunications
13 market in which prices for telecommunications equipment are declining. In fact, the
14 prices would be declining more rapidly if there were no inflation.

15
16 Q. HAVE YOU LOWERED YOUR COST OF CAPITAL ESTIMATE TO
17 REMOVE THE DOUBLE-COUNT OF THE ALLOWANCE FOR
18 INFLATION?

19 A. No. The total price of telecommunications equipment is affected by (1) inflation
20 and (2) technological improvements, which makes the question about how to avoid
21 the double-count for inflation part of a larger picture. That picture includes not only
22 the allowance for inflation, but the proper depreciation rate to use, and how to treat
23 the interrelationship between the cost of the new, most modern equipment versus
24 the embedded cost of older, but partially depreciated equipment. All of these
25 considerations are topics beyond the scope of the cost of capital determination.
26 They are properly treated in the context of the cost of service determination of the
27 UNE rates.

1

2 Q. IS THERE ANY SPECIAL COST OF CAPITAL RISK ASSOCIATED
3 WITH VERIZON NEW JERSEY'S ABILITY TO RECOVER ITS COST OF
4 SERVICE?

5 A. No. My testimony is based on the expectation that UNE rates have been
6 established at a high enough rate to cover operating and depreciation costs
7 associated with offering UNEs. In fact the Supreme Court decision in Verizon vs.
8 the Federal Communications Commission specifically determined that Verizon's
9 argument was "fundamentally false" because nothing in the TELRIC rules limits the
10 amount of depreciation that a state commission may recognize, noting that the
11 "First Report and Order 702 gave the state commissions considerable discretion.
12 ...specifically permitting more favorable allowances..." for depreciation.¹⁰ To the
13 extent that there may or may not be deficiencies in the way the recovery of
14 investment is computed, the proper place to correct those deficiencies is in the
15 proceeding where they are directly evaluated. It would be wrong to try and repair
16 problems, if any, with the depreciation allowance through a cost of capital
17 adjustment. Using the cost of capital rather than directly evaluating depreciation
18 would result in an imprecise, indirect, and therefore inherently inaccurate method of
19 dealing with the proper depreciation allowance.

20

21 Q. DOES THE PROVISION OF UNES REDUCE AN RBOC'S OVERALL
22 RISK?

23 A. Provisioning wholesale UNE services reduces the risk of the overall portfolio of
24 products and services offered by RBOCs as competitors capture some of the
25 RBOC's market share. The RBOC's investment is hedged because it at least

¹⁰ Verizon v. FCC, 122 S. Ct. at 1651.

1 keeps much of the wholesale business through its sales of UNE services that it
2 otherwise might lose to another telecommunications provider that uses its own
3 facilities and does not lease UNEs from the RBOC.

4

5 Q. DOES THE USE OF CURRENT EQUIPMENT COST RATHER THAN
6 EMBEDDED EQUIPMENT COST MEAN THAT RATES DERIVED FROM
7 CURRENT EQUIPMENT COST ARE LOWER THAN IF THE EMBEDDED
8 EQUIPMENT COST IS USED?

9 A. No. Even if it is true that the current cost of telecom equipment is less than in the
10 past, this does not automatically mean that rates based upon current costs are
11 lower than rates based upon embedded costs. Rates based upon embedded
12 costs are influenced by the accumulated provision for depreciation and the
13 accumulated provision for deferred income taxes. New equipment has neither
14 accumulated depreciation nor an accumulated provision for deferred income taxes.
15 Therefore, the “rate base” associated with embedded equipment would be lower
16 than the “rate base” associated with new equipment unless the cost of the new
17 equipment is substantially lower than the original cost of the embedded equipment.

18

1 Q. DOES THE COMPANY KNOW IF RATES BASED UPON EMBEDDED
2 EQUIPMENT COSTS WOULD BE HIGHER OR LOWER THAN RATES
3 BASED UPON REPLACEMENT COST ASSETS?

4 A. No. The information necessary to make this computation was requested in RAR-
5 ROR 8-11. The Company claimed it was unable to provide most of the
6 information requested in these interrogatories. Absent that information, it is
7 impossible to determine with certainty whether rates based upon the replacement
8 cost of assets is higher or lower than if rates for UNE service were based upon
9 embedded costs.

10

11 Q. IF RATES BASED UPON CURRENT COSTS FOR UNE EQUIPMENT ARE
12 HIGHER THAN IF RATES WERE BASED UPON EMBEDDED COSTS,
13 WOULD THAT LOWER THE COST OF CAPITAL THAT SHOULD BE
14 APPLIED TO UNE SERVICES?

15 A. Based upon the consistent application of Dr. Vander Weide's logic, the answer
16 would be yes. However, I have not made any adjustment to my recommended
17 cost of capital based upon the relationship between the level of rates based upon
18 current costs of UNE equipment versus rates based upon the embedded costs for
19 UNE equipment.

20

21 **IX EVALAUTION OF THE DIRECT TESTIMONY OF DR. VANDER**
22 **WEIDE**

23

24 Q. PLEASE SUMMARIZE THE FINDINGS AND RECOMMENDATIONS
25 IN THIS CASE.

26 A. Earlier in this testimony, I showed that the overall cost of capital that should be
27 allowed to Verizon New Jersey is 7.10%. This determination was based upon a

1 capital structure containing 43.60% common equity, a cost of equity of 9.50%, a
2 cost of 6.06% for long-term debt and 1.14% for short-term debt. My cost of
3 capital recommendation is substantially different from that of company witness Dr.
4 Vander Weide. He recommended an overall cost of capital of 15.98%.¹¹ This
5 extraordinarily high result is based upon a capital structure containing 75%
6 common equity, a cost of equity of 13.95%, and a cost of debt of 6.26%, results
7 that produced a weighted average cost of capital of 12.03%¹². He then added an
8 additional risk premium of 3.95% to this 12.03% to account for the ability of UNE
9 customers to leave the system.¹³

10 Dr. Vander Weide and I have each filed cost of capital testimony in the
11 same proceedings on numerous other occasions over the past several decades.
12 Just as in the past, we have made vastly different cost of capital recommendations
13 based upon very different capital structures and costs of equity. Also, just as in the
14 past, we strongly disagree on how to compute the DCF method and how to
15 quantify the actual debt to equity risk premium expected.

16 I have testified on the cost of capital in hundreds of different rate
17 proceedings in dozens of states and recently testified in Nova Scotia, Canada.
18 Based upon this experience, it is my observation that Dr. Vander Weide typically
19 overstates the cost of equity more than most other cost of capital witnesses who
20 testify for companies. In this case, Dr. Vander Weide's recommendation is far
21 more extreme and far more exaggerated than any case I have seen before, except
22 for Dr. Vander Weide's own relatively recent testimony in a Verizon New
23 Hampshire proceeding. His errors have compounded into a result that is literally an

¹¹ Dr. Vander Weide's Direct Testimony, at page 10 line 2.

¹² Dr. Vander Weide's Direct Testimony, Table 3 on page 48.

¹³ Dr. Vander Weide's Direct Testimony, at page 10, line 2.

1 astronomical return. His cost of debt is far too high because he ignored low-cost
2 short-term debt even though Verizon Communications has raised almost 10% of its
3 capital via the use of very inexpensive short-term debt. His already substantially
4 inflated 13.95% “cost” of equity is pumped up further by the addition of a
5 completely improper extra risk premium and by the use of a capital structure that is
6 contrary to the way Verizon actually raises its capital. If the Commission were to
7 award Verizon New Jersey the 15.98% return on capital proposed by Dr. Vander
8 Weide, this would be equivalent to allowing the company to earn a 31.19% return
9 on the equity of its real capital structure. See Schedule JAR 1, P. 3. Return on
10 equity means the return that Verizon Communications would earn every year on its
11 stockholders’ investment in Verizon. The “real” capital structure refers to the
12 actual capital structure provided to Verizon by its outside investors. By any
13 standard, a 31.2% return on equity is well beyond the level that firms operating in a
14 competitive environment could reasonably expect to maintain, and is a gigantic
15 return even for a company with an unregulated monopoly. It is the result of the
16 “excessive valuation or fictitious capitalization” noted by the US Supreme Court.¹⁴
17 Given the “almost insurmountable competitive advantage”¹⁵ found to be enjoyed
18 by Verizon by the US Supreme Court, anything resembling such an astronomical
19 return would severely harm if not totally preclude other carriers from providing any
20 competition to Verizon New Jersey in the provision of local service.

14 *Verizon v. FCC*, 122 S.Ct. 1646, 1662 (May 13, 2002).

15 *Id.*

1 Q. PLEASE SUMMARIZE THE PROBLEMS WITH DR. VANDER WEIDE'S
2 RECOMMENDED CAPITAL STRUCTURE.

3 A. Dr. Vander Weide has ignored the capital structure actually chosen by
4 management to finance the telecommunications assets of Verizon. Instead, he has
5 substituted a capital structure in which he uses the market value of the equity
6 capital. He also has failed to acknowledge the existence of short-term debt in the
7 financing equation. Verizon management realizes that short-term debt is a very
8 effective low cost way of providing the company with a substantial amount of
9 financing.

10 The use of a market value capital structure is wrong because it fails to
11 recognize that capital structure is something that is under the control of
12 management. The forward-looking capital structure required by the TELRIC
13 standards should reflect the capital ratios that competent management would use if
14 they were purchasing new telecommunications equipment today. Additionally, as
15 will be explained later in this testimony, use of a market-based capital structure is
16 specifically in violation of the U.S. Supreme Court's findings in the landmark Hope
17 Natural Gas case.

18

19 Q. PLEASE SUMMARIZE THE PROBLEMS WITH DR. VANDER WEIDE'S
20 COST OF EQUITY AND IMPLEMENTATION OF THE DCF METHOD.

21 A. The principal problems with Dr. Vander Weide's DCF methodology are reflected
22 in the following five errors in his determination of the cost of equity:

23 A.) **Dr. Vander Weide improperly relies on Analysts' 5-year growth**
24 **rates.** Dr. Vander Weide continues to testify to a DCF method that mechanically
25 relies on analysts' five-year growth rates as the long-term sustainable growth rate in
26 a constant-growth form of the DCF model. It is mathematically wrong to use a
27 five-year analysts' growth rate in the constant-growth form of the DCF model that

1 Dr. Vander Weide has presented; moreover, analysts' growth rates, even if used in
2 a mathematically valid way, contain the extra deficiency of having been shown in
3 study after study to be habitually optimistic. Knowledgeable investors have, for
4 years, treated analysts' forecasts with serious skepticism. However, the shocking
5 downfall of huge companies such as Enron and WorldCom that were previously
6 the darlings of many analysts has brought the entire securities analysis business into
7 the spotlight.

8 **B.) Dr. Vander Weide incorrectly adjusts a dividend yield term upwards**
9 **for quarterly-compounding.** Dr. Vander Weide's approach to escalating the
10 dividend yield for the impact of quarterly compounding is wrong because it
11 provides only part of the story. If it is correct to adjust the dividend yield upwards
12 to account for quarterly compounding, then it is just as correct to adjust the return
13 on equity DOWN to adjust for the daily compounding that occurs because a
14 company earns its return on equity every day as revenues are collected and a
15 DOWNWARD adjustment to the growth rate because if a company pays
16 dividends quarterly it has less use of the earnings to create growth. The downward
17 adjustments to the return on equity (adjustments Dr. Vander Weide fails to
18 consider) more than offset the upward adjustment to the dividend yield.

19
20 Q. PLEASE SUMMARIZE THE PROBLEMS WITH DR. VANDER WEIDE'S
21 RECOMMENDED COST OF DEBT.

22 A. Dr. Vander Weide has failed to consider that Verizon Communications, Inc. is
23 obtaining a substantial amount of short-term debt to finance its assets. Short-term
24 debt currently has a cost rate of 1.14% and it comprises almost 10% of Verizon
25 Communications capital structure. Yet, Dr. Vander Weide has included absolutely
26 none of the benefits of this low-cost source of capital in his cost of capital
27 computation. Additionally, Dr. Vander Weide has used a 7.40% cost of long-term

1 debt. Since he prepared his testimony, capital cost rates have come down
2 substantially. Now, 6.06% is the cost of debt to Verizon New Jersey and Verizon
3 Communications, Inc.

4

5 Q. PLEASE SUMMARIZE WHY DR. VANDER WEIDE PROPOSED RISK
6 PREMIUM TO HIS OVERALL COST OF CAPITAL IS INAPPROPRIATE.

7 A. Dr. Vander Weide proposes the addition of a risk premium to his overall cost of
8 capital because he believes that Verizon New Jersey's UNE business is
9 comparable to the equipment leasing business. Risk in the leasing business can be
10 high or low depending upon the type of equipment being leased. Whether or not
11 equipment can be re-deployed either at the end of the lease or in the event a lease
12 is terminated early can make a large difference in the relative risk of a lease. Dr.
13 Vander Weide's risk analysis is completely invalidated because of his failure to
14 consider this important causation factor in the leasing business. In this instance,
15 those leasing the UNE equipment want to continue to lease the equipment unless
16 the price is increased so much that the UNE business becomes unviable.
17 Additionally, if a CLEC purchaser of Verizon New Jersey's UNEs were to lose a
18 customer, the most likely scenario is that the facilities will be kept in use by the
19 customer's new service provider, whether that provider is Verizon or another
20 CLEC. This is in contrast to office equipment, where the lessor who returns the
21 office equipment would in all probability replace the leased equipment with different
22 equipment obtained elsewhere and the returned equipment would not be revenue
23 producing.

24 A.) REGULATORY DECISION IN A PRIOR UNE CASE INVOLVING
25 TESTIMONIES OF VANDER WEIDE AND ROTHSCHILD.

1

2 Q. HOW HAVE REGULATORY AGENCIES RESOLVED THE DIFFERENCES
3 BETWEEN YOU AND DR. VANDER WEIDE?

4 A. There are two separate instances in which Dr. Vander Weide and I both filed cost
5 of capital testimony in a Verizon UNE proceeding. One of those was the Verizon
6 New Jersey case in 2001, and the other was Verizon New Hampshire in 2003. In
7 both cases, Dr. Vander Weide was the cost of capital witness for Verizon New
8 Jersey. In the New Jersey case, I was the cost of capital witness for the New
9 Jersey Ratepayer Advocate. In New Hampshire, I was the cost of capital witness
10 for UNE customers Bay Ring and Conversent.

11 In the 2001 New Jersey proceeding, I recommended a cost of equity of
12 10.0%, and a capital structure containing 31.74% common equity. The cost of
13 capital section from the New Jersey Board's decision is included with this
14 testimony as JAR Rebuttal Exhibit 1. Summarizing, pages 37-40 of the Board's
15 decision discusses the cost of capital. The decision notes that the Ratepayer
16 Advocate recommended a cost of capital of 8.8% for UNEs, and Verizon New
17 Jersey's requested a cost of capital for UNEs of 12.6%. The decision notes that
18 Verizon New Jersey's high cost of capital request was based upon Verizon New
19 Jersey's claim for higher risks. In response to Verizon New Jersey's risk
20 argument, the New Jersey Board stated:

21 The fact remains that Verizon New Jersey maintains complete control over
22 its network and any market share losses to CLECs have come in the form
23 of UNEs or resale, for which it is duly compensated. Verizon New Jersey
24 remains the primary supplier of local telephone service as both the retail
25 and wholesale provider of service, and we anticipate that this will continue

into the foreseeable future.¹⁶

...

The Board agrees with the parties that have pointed out Verizon New Jersey's approach contains companies that offer goods and services that are far afield from the provisioning of UNEs. We disagree with Verizon New Jersey that its analysis is relevant to the provision of UNEs.¹⁷

...

In view of the foregoing, the Board ADOPTS the Advocate's proposal as the appropriate forward-looking cost of capital. The Advocate's analysis was the most reasonable one contained on the record. As an initial matter, the Advocate relied upon Verizon New Jersey's parent company in determining its capital structure. While the parent company's capital structure differs from Verizon New Jersey's, the Advocate argued that the Board should consider the fact that "(i)t is unreasonable to assume that 'the regulated operations in New Jersey are more risky than the other businesses owned by [Verizon]'" (Ab at 44). For the purposes of our review of whole sale unbundled network elements, this is reasonable. In addition, we FIND that the Advocate's debt and equity analyses are superior to

16 IN THE MATTER OF THE BOARD'S REVIEW OF UNBUNDLED NETWORK ELEMENTS
RATES, TERMS AND CONDITIONS OF BELL ATLANTIC-NEW JERSEY-INC., Docket No.
TO00060356, Decision and Order, at 38 (N.J. B.P.U. Mar. 6, 2002).

¹⁷ *Id.* at 38.

1 those proposed by the other parties.¹⁸

2

3 Q. HAS A DECISION BEEN ISSUED IN THE VERIZON NEW
4 HAMPSHIRE CASE?

5 A. Yes. The New Hampshire Public Utilities Commission issued Order No.
6 24,265 in DT-02-110 on January 16, 2004. In this case, the New
7 Hampshire Commission found that the cost of equity to Verizon New
8 Hampshire was 9.82% (p. 71 of decision), a result that was 0.18% less than
9 the 10.0% cost of equity that I recommended, and 4.31% less than the
10 14.13%¹⁹ cost of equity recommended by Dr. Vander Weide. The New
11 Hampshire Commission also rejected the use of the market value capital
12 structure proposed by Verizon in favor of a capital structure containing 45%
13 common equity, 53% long-term debt and 2% short-term debt.²⁰ While this
14 45% common equity ratio is higher than the common equity ratio that I
15 recommended in the Verizon New Hampshire case, it is very close to the
16 43.60% common equity ratio I am recommending in this case.

17 This Verizon UNE decision in New Hampshire found Dr. Vander
18 Weide's use of the I/B/E/S analysts consensus growth rate to be
19 "unacceptable." Among the reasons given were that the 12.22% growth rate
20 used by Dr. Vander Weide "... is substantially higher than accepted long-
21 term growth forecasts for the economy as a whole and is not justified for use
22 in the DCF model, especially, the one-stage, constant growth form of the
23 model used by Verizon."²¹ The New Hampshire Commission also correctly

¹⁸ *Id.* at 39.

¹⁹ Page 20 of New Hampshire Public Utility Commission decision in DT-02-110 dated January 16, 2004.

²⁰ Page 57 of Decision.

²¹ Page 63 of the decision in DT 02-110 dated January 16, 2004.

1 noted that "...the difference between Verizon's growth rates and the
2 sustainable growth rate is far too great for us to conclude that its growth rate
3 is sustainable indefinitely."²²

4 The New Hampshire Public Utilities Commission rejected Verizon's
5 argument to exclude short-term debt from the capital structure, rejecting the
6 company's attempt to track short-term debt to working capital, stating that:

7
8 We find that sound principles of finance caution against any attempt to 'track'
9 dollars raised by a company to any specific purpose."²³

10
11 Q. DID THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION
12 ADDRESS THE RISK PREMIUM ANALYSIS THAT DR. VANDER
13 WEIDE BASED UPON COPELAND/WESTON?

14 A. Yes. The New Hampshire Commission totally rejected Dr. Vander Weide's
15 risk premium, stating that:

16
17 The Copeland/Westin argument, while perhaps sound for the
18 purpose for which it was conceived, is not appropriate for
19 application to the UNE business.

20
21 The reasons given by the New Hampshire Public Utilities Commission
22 for rejecting Dr. Vander Weide's risk premium argument include:

23 Verizon is not required to incur investment expenses explicitly for
24 CLEC lines of business.²⁴

²² Ibid, p. 68.

²³ Ibid, p. 54.

²⁴ Ibid, Page 46.

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...

In addition, as stated in footnote 6 of Copeland/Westin, the lessor must, when faced with a cancellation of a lease, either ‘a) sell the asset at market value, or b) lease it again at a lower rate.’ We find neither of these scenarios persuasive for the actual business of a regulated provider of UNEs. We note that the possibility of the leased asset returning to the retail side of Verizon’s business and earning a higher return than the original UNE lease is inappropriately excluded from the application of Copeland/Westin to UNEs

Finally, no reasonable basis has been advanced in this case to apply a cancelable lease analogy to the UNE business, as opposed to the retail business. With the exception of individual long term contracts or special tariffs, none of Verizon’s customers, wholesale or retail, are bound to remain with Verizon.²⁵

Q. WHAT WAS THE RESULT OF THE CASE IMMEDIATELY PRIOR TO THE VERIZON NEW JERSEY CASE THAT BOTH YOU AND DR. VANDER WEIDE PRESENTED COST OF CAPITAL TESTIMONY?

A. The case in which Dr. Vander Weide and I each presented cost of capital testimony immediately before the Verizon New Jersey proceedings was a Public Service Electric and Gas proceeding, also in New Jersey. In that case, Administrative Law Judge McAfoos stated the following in his decision:

I am convinced from a review of the record that the assumptions made by Dr. Vander Weide in his study are inaccurate: he employed methodologies that ensure that his DCF study is skewed in such a way as to result in an exceedingly high return on equity calculation. These

²⁵ Ibid, P. 47.

1 include adjusting for quarterly dividend impacts, what I consider to be
2 an excessive level of financing costs, and the use of a five-year growth
3 rate rather than a long-term sustainable growth rate in his DCF analysis.

4 26

5
6 These same weaknesses found in Dr. Vander Weide's proposal, namely
7 quarterly dividend impacts, an excessive level of financing costs and the use of five-
8 year analysts growth rates rather than a long-term sustainable growth rate are
9 issues that all reappear in this case. In fact, the only issue that is new in this case is
10 Dr. Vander Weide's new strategy to add a risk premium based upon his concept
11 of viewing UNEs as a short-term lease.

12
13 B.) DR. VANDER WEIDE'S PROPOSED CAPITAL STRUCTURE HAS NO
14 BASIS.

15 Q. PLEASE EXPLAIN THE DIFFERENCES BETWEEN HOW YOU
16 DETERMINED CAPITAL STRUCTURE AND DR. VANDER WEIDE
17 DETERMINED CAPITAL STRUCTURE IN THIS CASE.

18 A. I determined capital structure by recognizing that if a competitor were to attempt to
19 replicate the used and useful telecommunications assets utilized by Verizon to
20 provide UNE service, the competitor would strive to raise the capital in a manner
21 that would produce the lowest overall cost of capital in the long-run. Minimizing
22 log run overall cost of capital is the only way to comply with the FCC's TELRIC
23 requirements. Since equity costs more than debt, and since the return on equity is

26 IN THE MATTER OF THE RULING OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY
PERTAINING TO ITS STRANDED COSTS AND ITS UNBUNDLED RATES, OAL DKT Nos. PUC
7347-97 and PUC 7348-97, Initial Decision and Report, at 54 (N.J. B.P.U. August 1998).

1 subject to income taxation while the return on debt is not (interest expense is tax
2 deductible), good management strives to use as little common equity as is practical.
3 A reasonable amount of common equity must be used because absent the
4 protection of equity, bond investors would be unwilling to invest. Bonds would
5 simply be too risky. If equity is just barely sufficient to attract bond investors, then
6 the cost of debt becomes too high. As a result, because of high financial risk, the
7 cost of equity also becomes too high. Therefore, good management uses enough
8 common equity to keep the cost of debt and cost of equity at reasonable levels but
9 does not use so much equity that it burdens itself with any more common equity
10 than necessary.

11 Another consideration in capital structure is how much short-term debt to
12 use and how much long-term debt to use. Generally, short-term debt costs less
13 than long-term debt. However, short-term debt rates are more subject to
14 fluctuations in interest rates than long-term debt.

15 There are two basic choices that can realistically be used to determine the
16 proper capital structure to use for determining the overall cost of capital. One is to
17 use the capital structure actually implemented by management and the other is to
18 challenge management by showing that the capital structure they selected is sub-
19 optimal. In this case, I reviewed the actual capital structure selected by the
20 management of Verizon Communications and concluded that it was a reasonable
21 proxy to use for an optimal capital structure. Therefore, whenever possible, I
22 propose the use of the actual capital structure selected by management to finance
23 its current and future operations. The actual capital structure is the capital structure
24 of the consolidated entity, as the capital structure of a subsidiary is often set with
25 alternative goals in mind.

1 Page 98 of the current edition of Standard & Poor's Corporate Ratings
2 Criteria contains a section entitled "Parent/Subsidiary Rating Links". This section
3 specifically notes that:

4
5 A strong subsidiary owned by a weak parent generally is rated no higher than
6 the parent. The key reasons for this are:

- 7
8 • The ability of and incentive for a weak parent to take assets from the
9 subsidiary or burden it with liabilities during financial stress; and
10 • The likelihood that a parent's bankruptcy would cause the subsidiary's
11 bankruptcy, regardless of its stand-alone strength.

12
13 Therefore, if Verizon New Jersey is viewed as the strong subsidiary, its
14 bond rating will be drawn down to that of the weaker Verizon Communications -
15 meaning that the Verizon Communications capital structure is controlling.

16 Page 98 of Corporate Ratings Criteria also states that a weak subsidiary
17 of a strong parent usually enjoys a stronger credit rating than it would on a stand-
18 alone basis. Therefore, even in this instance, the capital structure of the
19 consolidated entity still has importance.

20 In a prior issue of Corporate Ratings Criteria, the following was stated:

21
22 Standard & Poor's no longer allows the corporate credit rating (CCR) of a
23 regulated telephone operating company to be higher than the CCR of its parent.²⁷
24

²⁷ Corporate Rating Criteria", Standard & Poor's, 2001, at 46.

1 The current issue of Credit Ratings Criteria no longer specifically contains
2 the above quote because it no longer contains a separate section on Telecom.
3 However, the statements in the Credit Ratings Criteria document on how the
4 parent/subsidiary relationship is viewed shows that Standard & Poor's still views
5 telecom in essentially the same way as it did in its prior Credit Ratings Criteria
6 report.

7 In contrast to Dr. Vander Weide, I reviewed the actual capital structure
8 selected by the management of Verizon Communications and concluded that it was
9 a reasonable proxy to use for an optimal capital structure.

10 The "market value" capital structure proposed by Dr. Vander Weide is not
11 forward-looking. If a competitor were to attempt to replicate the used and useful
12 telecommunications assets utilized by Verizon New Jersey to provide UNE
13 service, a competitor with competent management would strive to raise the capital
14 in a manner that would produce the lowest overall cost of capital in the long-run.
15 Since equity costs more than debt, and since the return on equity is subject to
16 income taxation while the return on debt is not (interest expense is tax deductible),
17 good management strives to use as little common equity as is practical. A
18 reasonable amount of common equity must be used because absent the protection
19 of equity, bond investors would be unwilling to invest. Bonds would simply be too
20 risky. If equity is just barely sufficient to attract bond investors, then the cost of
21 debt becomes too high. As a result, because of the high financial risk, the cost of
22 equity also becomes too high. Therefore, good management uses enough common
23 equity to keep the cost of debt and cost of equity at reasonable levels but does not
24 use so much equity that it burdens itself with any more common equity than
25 necessary.

26 If the "market value" capital structure suggested by Verizon New Jersey
27 were used for UNE rates, but the book value capital structure were used for the

1 regulated portion of Verizon New Jersey's operations, consistency would require
2 that when determining the overall cost of capital for Verizon New Jersey, it would
3 be necessary to make a downward adjustment to the book reported capital
4 structure to recognize that a higher allocation of equity capital had been made to
5 the UNE operations. When the book value equity is less than the market value
6 equity, economic value is created when the book value equity is switched to a the
7 market value capital structure. Therefore, any responsible economic analysis of a
8 market based capital structure would have to consider this value increment

9 Another substantial problem with the capital structure proposed by Dr.
10 Vander Weide is that he has completely ignored short-term debt. Short-term debt
11 is a very low cost of capital that is currently used extensively by Verizon.

12

13 Q. WHAT IS WRONG WITH DR. VANDER WEIDE'S USE OF "MARKET"
14 CAPITALIZATION RATHER THAN BOOK CAPITALIZATION?

15 A. Using a market based capitalization is improper because it loses sight of how
16 capital structure is determined in the first place. Indeed, a market based
17 capitalization does not address the optimal cost of capital decisions either through
18 direct computation or indirectly thorough decisions made by management. It also
19 does not address the analyses made by rating agencies such as Standard & Poor's.

20 During the technical session, Dr. Vander Weide tried to ignore the
21 relevance of Standard & Poor's by stating that Standard & Poor's bond rating is
22 not a rating on the risk of the common stock. While the Standard & Poor's bond
23 rating is indeed NOT a rating on the risk of the common stock, the proper capital
24 structure selection is about the relative risk of not only common stock, but bonds
25 as well. As I stated earlier, unless the risk of investment is sufficiently low, bond
26 investors will either demand very high interest rates or will possibly refuse to invest
27 at all.

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Q. EARLIER IN THIS TESTIMONY, YOU STATED THAT USING A MARKET-BASED CAPITALIZATION IS IN DIRECT CONTRADICTION TO THE US SUPREME COURT’S FINDING IN THE HOPE NATURAL GAS CASE. PLEASE EXPLAIN.

A. Stock prices are substantially impacted by future expectations of earnings. If one is using a market based capital structure, the higher the stock price, the higher the percentage of common equity in the capital structure. The higher the percentage of common equity in the capital structure, the higher the revenue requirement. In other words, using a market based capital structure to establish the revenue requirements of a company would result in an upward spiral where higher stock prices would produce a need for higher income requirements, and the higher income requirements would produce a need for higher revenue requirements. Such an outcome is, on the face of it, unreasonable. The Hope decision wisely states:

“fair value” is the end product of the process of rate-making not the starting point as the Circuit Court of Appeals held. The heart of the matter is that rates cannot be made to depend upon “fair value” when the value of the going enterprise depends on earnings under whatever rates may be anticipated.²⁸

Using a market-based capitalization would effectively use the higher earnings to establish the stock price, which is identical in this context to “fair value”. This “fair value” is then improperly used by Dr. Vander Weide to attempt to justify higher earnings, a circle that is specifically what the Hope decision says cannot be done.

²⁸ *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 601 (1943).

1

2 C.) DR. VANDER WEIDE'S RECOMMENDED COST OF EQUITY IS
3 PREMISED ON FLAWED CONCLUSIONS.

4

5 Q. PLEASE EXPLAIN YOUR CONCERN WITH DR. VANDER WEIDE'S
6 COST OF EQUITY AND IMPLEMENTATION OF THE DCF METHOD.

7 A. There are many problems with Dr. Vander Weide's implementation of the DCF
8 method. Two of the largest problems with Dr. Vander Weide's DCF method are:
9 1) he used a constant-growth version of the DCF model, but used a proxy for
10 long-term growth based solely on earnings per share growth forecast for the five
11 years from 2002 to 2007, and 2) he arbitrarily eliminates companies from his DCF
12 analysis if the DCF indicated cost of equity was outside of a range he felt
13 reasonable.²⁹ Through such an elimination process, he negates the results of his
14 DCF analysis and instead distills the result to one that is merely dependent upon the
15 cut-off range of his choosing.

16

17 Q. PLEASE EXPLAIN WHY THE DCF CUT-OFF RANGE CHOSEN BY DR.
18 VANDER WEIDE CAN HAVE SUCH A LARGE IMPACT ON HIS DCF
19 RESULT.

20 A. By eliminating any DCF result that is either below the A rated bond interest rate or
21 is above 20%, he assures that his DCF result will always be close to mid-way
22 between the A rated bond rate and 20% irrespective of whether or not there is any

²⁹ Dr. Vander Weide explains on page 3 of his Attachment A that those companies with cost of equity results equal to or below the April 2003 average yield on Moody's A-rated industrial bonds or equal to or above 20 percent, and "those 25% of companies with the highest and lowest DCF results". He does not state what result he would have obtained if he had not made such an exclusion.

1 validity to his DCF computations. Furthermore, even if his DCF computations did
2 have some meaning, the truncation destroys the meaning. While it might be true
3 that DCF results below an A rated bond interest rate are somewhat questionable
4 (at least until or if the tax law on dividends is changed), by eliminating such low
5 results he provides for an upward skewing to his answer. His decision to eliminate
6 companies with a DCF result above 20% does not provide an equal balance to his
7 skewing because the 20% cut-off point is not symmetrical to the lower-end cut-off
8 point. Since the true cost of equity is about 10%, Dr. Vander Weide's filter on his
9 DCF results is upwardly biased because his upside filter is much further away from
10 the true cost of equity than is his downside filter. The earnings per
11 share consensus growth rate is an unreasonable proxy for long-term sustainable
12 growth. Even if analysts' reports did not contain the upward bias that they are
13 known to have, the five-year growth rate is NOT the long-term sustainable growth
14 rate required for use in the constant-growth form of the DCF model.

15

16 Q. SHOULD ANY OF THE NON-RECURRING GROWTH IN EARNINGS
17 PER SHARE BE INCLUDED IN THE "G" TERM OF THE CONSTANT
18 GROWTH FORM OF THE DCF MODEL?

19 A. No. The "g" term in the constant growth form of the DCF model refers to cash
20 flow growth anticipated by investors. Stock investors receive cash flow from
21 dividends until the stock is sold, and receive the proceeds from the stock sale once
22 the stock is sold. The boards of directors of most companies seek a stable
23 dividend policy, meaning that dividends do not dip when earnings dip abnormally
24 and do not increase as rapidly as earnings when earnings return to more typical
25 levels. Stock prices are largely based upon future anticipated earnings. Therefore,
26 current stock prices are already related to the future sustainable level of earnings.

27

1 Q. IN RESPONSE TO RAR-ROR-38 (C), DR. VANDER WEIDE PROVIDED A
2 COPY OF A STUDY THAT HE CLAIMS JUSTIFIES THE USE OF
3 ANALYSTS' FORECASTS IN THE DCF MODEL. PLEASE COMMENT
4 ON THE STUDY.

5 A. Dr. Vander Weide provided a study that he conducted back in the 1980's, as its
6 publication date is Spring 1988. What Dr. Vander Weide failed to disclose is that
7 this referenced study does NOT address the accuracy of analysts' growth rates for
8 use in a DCF model, and it does NOT compare the use of an analysts' five-year
9 growth rate with the use of more sophisticated models such as the a comparison of
10 the sustainable growth rate obtained by using the future expected value of "r" in a
11 "b x r" (or retention rate times future expected return on book equity) computation.
12 Notably, his 1988 study concludes that "our studies affirm the superiority of
13 analysts' forecasts over simple historical growth extrapolations in the stock price
14 forming process."

15 Based upon prior testimonies that Dr. Vander Weide has filed, I know
16 from experience that he has testified that his study rebuts the use of the "b x r"
17 growth rate method. What he has failed to disclose is that it rebuts the use of a "b
18 x r" method in which the value of "r" is only based upon the mechanical use of an
19 historic earned return. I do not recommend here and have never recommended a
20 cost of equity using a DCF method that merely accepts the historic earned return
21 on equity as the number to use in a DCF model. The distinction is very important.
22 In fact, a study similar to the one prepared by Dr. Vander Weide specifically
23 noted that when future estimate for "r" is used, as I have done, then the conclusion
24 changes. One commonly quoted study was done by Gordon, Gordon and

1 Gould.³⁰ In this study, the authors concluded that a “b x r” approach based upon
2 future expected values for “r” would likely have been “as good or better” than all
3 of the other growth rate measures they tested.
4

³⁰ Choice Among Methods of Estimating Share Yield, the Journal of Portfolio Management, David A. Gordon, Myron J. Gordon and Lawrence I. Gould, Spring 1989.

1 Q. PLEASE EXPLAIN WHY THE STUDY PRESENTED BY DR. VANDER
2 WEIDE IN RESPONSE TO RAR-ROR-38 (C) DOES NOT SHOW THE
3 VALIDITY OF USING FIVE-YEAR ANALYSTS FORECASTS IN A DCF
4 MODEL.

5 A. Because helping explain a stock price is different from properly quantifying a future
6 expected growth rate, the study presented by Dr. Vander Weide correctly avoided
7 reaching the conclusion about the accuracy of using analysts' forecasts in a DCF
8 model. His study shows that over the time period he examined (1971-1983),
9 analysts' growth rates better explained stock prices than did historic growth rates.
10 The use of historic growth rates is indeed a flawed means of projecting future
11 growth of a particular stock because investors purchase stock based upon future
12 expectations. Also, historic growth rates can be highly influenced by how typical
13 or atypical the starting or ending years' results were. Over relatively short time
14 periods such as five or ten years, the end-point error can be so large as to make
15 the historic growth rate indicators not much better than random numbers. Random
16 numbers do not help explain stock prices. Analysts' forecasts have many flaws,
17 generally have an upward bias, but they are less likely to be random than are
18 historic growth rate numbers.

19 To show why there is a big difference between finding an indicator that
20 somewhat correlates to stock prices and one that might be accurate for use in the
21 DCF method, assume that analysts' five-year growth rate forecasts were always
22 exactly 5% per year too high. In this assumption, they would therefore be
23 predicting a 7% growth rate for companies in which future growth was expected to
24 be 2% per year, and would be predicting a 12% growth rate for companies in
25 which future growth was expected to be 7% per year. Notably, numbers that are
26 predictably too high are useful in explaining stock prices because a company with a
27 7% growth rate should be expected to have a higher stock price than one with an

1 expected 2% growth rate (other things being equal). Regardless of the fact that the
2 7% growth rate is expressed as a “12” and a 2% growth rate is expressed as a
3 “7”. Under this hypothetical, the same consistently overstated numbers that could
4 explain stock prices would be completely inappropriate for use in a DCF model.
5 At this time, we know from numerous other studies that have been done over the
6 years that analysts’ estimates are habitually high and we know from the very
7 serious events that have occurred over the last few years that investors are more
8 aware than ever before that analysts’ forecasts are overly optimistic. Knowing this,
9 the only reasonable conclusion to reach is that using analysts’ five year earnings per
10 share growth rates in the DCF formula will overstate the growth rate and therefore
11 overstate the cost of equity even if these analysts forecasts MIGHT still be able to
12 help predict stock prices.

13

14 Q. ARE THERE ANY STUDIES THAT SPECIFICALLY SHOW THE
15 INACCURACY OF ANALYSTS FORECASTS?

16 A. Yes, there are many. An excellent survey of a number of such studies is presented
17 in the book “CONTRARIAN INVESTMENT STRATEGIES: THE NEXT
18 GENERATION” by David Dreman.³¹ Chapter 5 from this book, starting on page
19 88, provides substantial analytical evidence showing the inaccuracy of analysts
20 forecasts. The book references studies that appeared in numerous places,
21 including Forbes and a report made by I/B/E/S to its investors. Page 98 of the
22 chapter contains the following:

23 How optimistic are analysts’ estimates? Jennifer Francis and
24 Donna Philbrick studied analysts estimates from the Value Line Investment

³¹ Published by Simon & Schuster © 1998.

1 Survey, some 918 stocks for the 1987-1989 period. Value Line is well
2 known on the Street for having near-consensus forecasts. The research
3 found that analysts were optimistic in their forecasts by 9% annually, on
4 average. Again, remembering the devastating effect of even a small miss
5 on the high-octane stocks, these are very large odds to be stacked against
6 the investor looking for ultra-precise earnings estimates.

7
8 The over optimism of analysts is brought out even more clearly by
9 I/B/E/S, the largest earnings forecasting service, which monitors quarter 1
10 consensus forecasts on more than 7,000 domestic companies. In a report
11 to its subscribers, I/B/E/S stated that the average revision for stocks in the
12 S&P 500, which make up approximately 75% of the market value of
13 stocks traded on the New York Stock Exchange, is 12.9%. from the
14 beginning to the end of the year in which the forecast is made. Analysts
15 revise their estimates 6.3% in the first half and 19.5% in the second half of
16 the year. Despite these estimate changes, according to I/B/E/S, analysts
17 tend to be optimistic. What seems apparent is that analysts do not
18 sufficiently revise their optimistically biased forecasts in the first half, and
19 then almost triple the size of the revisions, usually downward, in the second
20 half of the year. Even so, their forecasts of earnings are still too high.

21
22 In a recent study, Eric Lufkin and I provided further evidence of
23 analysts' over optimism. Between 1982 and 1997, analysts overestimated
24 the growth of earnings of companies in the S&P 500 by a startling 188%.
25 The actual growth was 7.8% annually, while the original projected growth
26 at the beginning of each year was 21.9%.

1 The above findings combined with the overwhelming amount of negative publicity
2 received by analysts over the last year or two, combine to show that using analysts'
3 consensus forecasts will overstate the growth rate that is anticipated by the
4 consensus of investors.

5

6 Q. YOU SAID THAT DR. VANDER WEIDE IMPROPERLY USED A
7 QUARTERLY DISCOUNTING ADJUSTMENT IN HIS DCF MODEL.
8 WHY IS THE QUARTERLY VERSION OF THE DCF MODEL
9 INCORRECT?

10 A. The quarterly model is incorrect because it is incomplete. While it is correct that
11 companies typically pay dividends quarterly, at the same time the quarterly
12 payment of dividends gives the investor the use of the dividend sooner, it removes
13 the cash from the company that much sooner. When the company disburses cash
14 to pay its stockholders, that action suppresses its growth. Therefore, any upward
15 adjustment to account for investors' receipt of a dividend quarterly is offset by the
16 lower growth that a company can obtain because it has use of the money for that
17 much shorter of a time period. Additionally, if one wishes to consider the quarterly
18 compounding effect of dividends, then it is equally appropriate to consider the daily
19 compounding of the return on equity that a company receives. The earnings are
20 compounded daily because a company receives revenues every day. If the daily
21 compounding is considered, then the return on equity that needs to be authorized
22 so a company can actually earn 10% per year is less than 10%. In fact, if a daily
23 compounding is considered, then a company needs to only be allowed to earn
24 9.532% per year. This is because 9.532% per year divided by 365 is 0.026% per
25 day. 0.026% per day compounded daily is 10%.

26

1 D.) DR. VANDER WEIDE'S PROPOSED COST OF DEBT IS OVERSTATED.

2 Q. PLEASE EXPLAIN DR. VANDER WEIDE'S RECOMMENDED USE OF
3 SHORT-TERM DEBT IN COMPUTING THE OVERALL COST OF
4 CAPITAL.

5 A. Dr. Vander Weide has ignored short-term debt altogether. Even though the
6 management of Verizon Communications, Inc. has decided to obtain almost \$10
7 billion of its total financing through short-term debt, Dr. Vander Weide has
8 pretended that no short-term would be used by management building a new
9 telecommunications system today. This omission is critical both because of the
10 magnitude of his omission combined with the very low cost associated with short-
11 term debt. No doubt, the management of Verizon Communications has been
12 tempted to utilize such a high level of short-term debt because of its very low cost.
13 Currently, the cost of short-term debt to
14 Verizon is 1.14%. See RAR-ROR-3.

15

16 Q. PLEASE COMMENT ON DR. VANDER WEIDE'S COST OF LONG-TERM
17 DEBT.

18 A. He based his cost of long-term debt on the cost rate for A rated debt. However,
19 he did not determine if the source for his data included the interest rate impact of
20 callable bonds. See the response to RAR-ROR-36 (c). When interest rates drop,
21 the market price on callable bonds will not increase as rapidly as non-callable
22 bonds. This is because investors are reluctant to pay a premium for bonds that are
23 likely to be called. % is the cost of debt to Verizon. New Jersey and Verizon
24 Communications, Inc. Additionally, his cost of long-term debt is a mismatch to his
25 recommended capital structure. If a telecommunications company were to finance

1 its assets with 75% equity, its cost of debt would be lower than the cost for an A
2 rated company.

3
4 E.) DR. VANDER WEIDE IMPROPERLY PLACES A RISK PREMIUM ON HIS
5 PROPOSED COST OF CAPITAL.

6
7 Q. DR. VANDER WEIDE ARGUES THAT A RISK PREMIUM SHOULD BE
8 ADDED TO THE OVERALL COST OF CAPITAL TO ALLOW FOR HIS
9 PERCEPTION OF THE EXTRA RISK CAUSED BY THE LACK OF A
10 LONG-TERM CONTRACT BETWEEN VERIZON AND UNE
11 CUSTOMERS. PLEASE RESPOND.

12 A. Dr. Vander Weide's computations do not reflect reality because they do not
13 consider the actual risk exposure. He focuses on the "high risk" caused by the
14 possibility, however remote, that the UNE customers COULD cease buying UNE
15 services from Verizon. Key facts omitted from his analysis include a) the UNE
16 carrier's retail customers would almost certainly continue to need service from the
17 same Verizon equipment if the customer either switched wholesale providers or
18 switched to Verizon; b) no track record of UNE customers leaving the system
19 was provided; c) Verizon did not make an incremental investment in the equipment
20 in the first place, so there is essentially no UNE investment to lose; d) in the remote
21 likelihood that the UNE equipment should become available for Verizon's use, the
22 growth of its own system could use the equipment; e) if additional spare capacity
23 became available, the cost of spare capacity is borne by ratepayers, not investors.
24 This is fair because ratepayers are now receiving the benefit of a reduced average
25 cost as a result of economies of scale.

26 Leasing is not automatically "risky." Automobile leases, for example, are

1 available on new cars that have interest rates typically in the 5% to 8% range.
2 Leasing automobiles entails risk, as the leasing company could have to sell the car
3 at the end of the lease for a price that might be lower than originally expected.
4 While a leasing customer is contractually committed to remaining a lease customer
5 for three years, this difference is only semantics.

6
7 Q. DOES DR. VANDER WEIDE DIFFERENTIATE BETWEEN A UNE LEASE
8 AND AUTOMOBILE LEASES?

9 A, On page 60 of his direct testimony, he attempts to make a differentiation. He says
10 that UNE leases and automobile leases are different because of “(1) the size of the
11 investment; (2) the ability to sell the investment in the case of financial difficulties;
12 and (3) the risk of default on the financial contract. In the case of the automobile
13 investment, the amount of the investment typically is small relative to the lessee’s
14 wealth; the asset is relatively easy to sell if the lessee defaults on his contract; and
15 the likelihood of default is relatively small.” On closer observation, these arguments
16 made by Dr. Vander Weide to differentiate the UNE lease and an automobile lease
17 do not justify a higher risk for UNE services. First, while the investment made by
18 Verizon in its network is huge, the incremental investment made by Verizon in its
19 network to service UNE’s is zero. The second point that Verizon cannot sell its
20 UNE investment in difficult times becomes meaningless because there is no
21 incremental investment to recover. The third point is the risk of default on the
22 financial contract. While it is certainly possible that a CLEC could be placed in a
23 position where it can no longer pay its bills, this also happens to people who lease
24 automobiles. Only, in the case of a person failing to make payments on the
25 automobile, the leasing company has to repossess the automobile. Verizon has no
26 such risk because it never loses possession of the portion of its network that is
27 leased. In consideration of repossession lease and the zero incremental investment,

1 leasing UNE's is lower in risk than leasing automobiles.

2 I am not aware of any regulatory commission that has ever added a lease
3 risk premium when computing the return on a UNE investment. UNE facilities,
4 while leased to CLECs, are in fact used by retail customers. These customers may
5 be retail customers of the CLECs rather than Verizon. However, from the
6 perspective of the risk of continued use of the UNE equipment, the equipment is in
7 fact being used by retail customers whether through the CLEC or directly through
8 Verizon. Verizon's retail customers use equipment without a long-term lease just
9 as is the case with the UNE equipment used by the retail customers of the CLECs.
10 To treat them differently would be discriminatory.

11
12 a. HOW DID DR. VANDER WEIDE IMPLEMENT HIS LEASING
13 RISK PREMIUM?

14 A. Dr. Vander Weide implemented his leasing risk premium by adding a 3.95%
15 leasing risk premium to his overall cost of capital to arrive at his cost of capital
16 recommendation for UNEs of 15.98%³². He added this premium not to just the
17 cost of equity, but to the overall cost of capital. By adding the leasing risk premium
18 to the cost of capital rather than the cost of equity, the effect on bloating the return
19 on equity is even greater than an already very high and totally unnecessary 3.95%.
20 The actual interest rate paid to the debt holders remains unchanged even though
21 Dr. Vander Weide's method adds a premium to the debt return as well as to the
22 equity return. The result is that if Dr. Vander Weide's recommendation were
23 adopted, Verizon would earn a considerably higher return on its equity than even
24 Dr. Vander Weide's already; inflated 13.95%.

³² Dr. Vander Weide's direct testimony, page 10, line 2.

1 Any leasing premium, let alone one that is added to the cost of capital
2 rather than the cost of debt, is completely inappropriate in this case because:

- 3 a) Verizon New Jersey has not put essentially no funds at all at risk to
4 service UNEs;
- 5 b) the lease should not be treated as though it were a cancelable lease,
6 because in the unlikely event that the UNE customers should leave,
7 their retail customers would continue to require the very same facilities
8 because they would still have to obtain telecommunications service
9 either through another wholesale provider or directly through Verizon
10 New Jersey;
- 11 c) the facilities could be re-deployed to serve future growth;
- 12 d) over-capacity is built into the system and included in the cost
13 determination of regulated retail rates;
- 14 e) the ability of a customer to leave the system without notice is already a
15 feature of normal retail customers. Whatever risk is associated with
16 the potential for customers to leave the system is already included in
17 the cost of capital;
- 18 f) the proper mechanism for Verizon New Jersey to receive a return of its
19 investment is through the proper selection of depreciation rates where
20 the risk of technical obsolescence can be viewed directly rather than
21 through an abstract “risk adjustment” to the cost of equity; and
- 22 g) the only risk that should be included in the cost of capital is non-
23 diversifiable risk. Risk of customers potentially leaving the system or
24 risk of technological change are diversifiable risks, or risks that do not
25 influence the cost of capital.

1 F.) SUMMARY OF ARTICLES ON PROBLEMS WITH SECURITIES
2 ANALYSTS.

3

4 Q. HOW HAS DR. VANDER WEIDE USED ANALYSTS FORECASTS IN
5 THIS CASE?

6 A. As in his prior testimonies, Dr. Vander Weide mechanically uses analysts' five-year
7 earnings per share forecasts as if they are the proxy for investors' long-term growth
8 expectations.

9

10 Q. IS THIS CONTINUED USE JUSTIFIED?

11 A. While using analysts' five-year forecasts as the proxy for long-term growth
12 expectations in a DCF model has never been appropriate, relying on analysts'
13 growth rates as an indicator for investors expectations is more incorrect today than
14 ever. Nevertheless, Dr. Vander Weide's blind use of analysts' forecasts continues
15 unabated in spite of all of the evidence to the contrary. Just how out of step Dr.
16 Vander Weide is regarding his dogmatic treatment of analysts is dramatically
17 shown by contrasting his response to an interrogatory, with what Arthur Levitt, the
18 former head of the Securities and Exchange Commission, said in his recently
19 published book.

20 Page 14 of Arthur Levitt³³'s book entitled TAKE ON THE STREET. What Wall
21 Street and Corporate America Doesn't Want You to Know published in 2002 by
22 Pantheon Books states the following on pages 13-14: Enron used accounting

³³ Arthur Levitt was chairman of the US Securities & Exchange Commission starting in 1993, and was the longest-serving SEC chairman. The book jacket also notes Mr. Levitt "was also chairman of the New York City Economic Development Corporation and the American Stock Exchange." He was also president of Shearson Hayden Stone until 1978. When he left Shearson, Hayden, Stone, "the firm was one of the nation's largest brokerages" at 5.

1 tricks to remove debt from the books, hide troublesome assets, and pump up
2 earnings. Instead of revealing the true nature of the risks it had taken on, Enron's
3 financial statements were absurdly opaque. Auditors went along with the fiction,
4 blessing the off-the-books entities that brought the company down. Most analysts
5 also played along, recommending Enron's stock even though they couldn't
6 decipher the numbers. Analysts were foils for their firms' investment banking
7 divisions, which had been seduced by the huge fees Enron was paying them to sell
8 its debt and equity offerings.

1 [Bold emphasis added]

2 Contrary to what Dr. Vander Weide says, analysts did not warn investors
3 of the problems with either Enron or WorldCom. As a consequence of analysts'
4 failure to provide the warning, hundreds of thousands of investors lost many billions
5 of dollars.

6 A later section of this rebuttal testimony contains a summary of some key
7 articles that appeared in business journals throughout the last year. These articles
8 definitively show that investors are currently aware of the serious biases contained
9 in the recommendations of many analysts' reports. As an industry, the securities
10 analysis business is severely tainted. Any cost of equity computation that is made
11 today must recognize this or run the risk of arriving at a conclusion that is
12 completely out of step with investors.

13 Dr. Vander Weide admits that he continues to use the same analysts'
14 forecasts he used years ago in spite of the severe negative publicity that analysts
15 have received in light of the bursting of the stock market "bubble". Investors point
16 blame at not only WorldCom and Enron analysts, but numerous other analysts as
17 well. Even if analysts were to miraculously clean up their act over night, in a best
18 case scenario, it will take many years for analysts to achieve credibility.

19 The inapplicability of analysts' growth rates in the DCF formula is further
20 illustrated by the necessity for Dr. Vander Weide to eliminate a substantial number
21 of companies from his comparative group simply because the DCF result he
22 obtained was within a range he felt reasonable. ³⁴ His elimination of companies

³⁴ Dr. Vander Weide explains in his Attachment A that he has eliminated those companies with cost of equity results equal to or below the April 2003 average yield on Moody's A-rated industrial bonds or equal to or above 20 percent.

1 outside of his pre-determined range virtually assures him that the result he will get
2 from his DCF analysis is near the mid-point of the remaining range irrespective of
3 what the cost of equity is. In other words, Dr. Vander Weide's choice of the
4 range outside of which he excludes results can have an even larger and larger
5 impact on his DCF result than his choice to use inflated analysts' forecasts in a
6 mathematically invalid way.

7 Q. EARLIER IN YOUR TESTIMONY, YOU SAID THAT ARTICLES IN
8 BUSINESS LITERATURE DEFINITELY SHOW THAT INVESTORS'
9 ARE AWARE OF THE SERIOUS BIASES CONTAINED IN THE
10 RECOMMENDATIONS OF MANY ANALYSTS' REPORTS. AS AN
11 INDUSTRY, THE SECURITIES ANALYSIS BUSINESS IS SEVERELY
12 TAINTED. PLEASE SUMMARIZE THOSE ARTICLES.

13 A. There have been countless articles that appeared in both in business publications
14 and the popular press throughout the last year. Business Week, a widely read
15 important business publication contained numerous articles that reported on the
16 problems with securities analysts. These include:

17 1.) **A cover story entitled "How Corrupt is Wall Street"**
18 **appeared in the May 13, 2002 issue of Business Week.**

19 a) The article mentions that Merrill Lynch, Solomon Smith Barney,
20 Morgan Stanley Dean Witter along with 10 other firms are being
21 investigated by the US Securities and Exchange Commission for
22 unethical practices.³⁵

23 b) According to the article, New York State Attorney General Eliot
24 Spitzer made public e-mail exchanges at Merrill where, e-mail
25 messages uncovered by Mr. Spitzer showed that "...analysts

³⁵ Business Week, May 13, 2002, at 37.

1 disparage stocks as ‘crap’ and ‘junk’ that they were pushing at the
2 time. The e-mails are so incendiary that they threaten to thrust Wall
3 Street into the sort of public-relations nightmare that Philip Morris,
4 Ford, Firestone, and Arthur Andersen have endured in recent
5 years”³⁶.

6 c) The article features the following quote from David Komansky, the
7 CEO of Merrill Lynch, by placing it in bold letters and large print:

8
9 We have failed to live up to the high standards that are our tradition, and I
10 want to take this opportunity to publicly apologize to our clients, our
11 shareholders, and our employees³⁷.

12
13 In the above quote, Mr. Komansky was responding to what Business Week
14 describes as “...the analysts’ debacle...”³⁸

15
16 2.) **The cover of the July 29, 2002 issue of Business Week**
17 **features the article entitled “THE ANGRY MARKET.”**

18 The Cover summarizes the article by saying “THE BLUNT MESSAGE:
19 Investors are repricing stocks to reflect a more honest picture of earnings, options,
20 and the future.” In a discussion about the inaccurate and misleading earnings
21 reporting done by many companies, Business Week says:

36 Business Week, May 13, 2002, at 39

37 Business Week, “How Corrupt is Wall Street”, May 13, 2002, at 42

38 *Id.* at 42.

1 Brokerage-house analysts aren't much help either. They tend to do what
2 companies want. For example, only six of the 21 analysts that have given
3 First Call their estimates for AOL Time Warner Inc.'s 2003 earnings
4 actually provided GAAP figures.

5
6 3.) **A cover article in the August 5, 2002 issue of Business Week is**
7 **entitled "INSIDE THE TELECOM GAME How Salomon's Jack**
8 **Grubman wheeled and dealt with WorldCom, Qwest, Global Crossing,**
9 **and others."** The article discusses the buy recommendations consistently

10 made by Mr. Grubman on these companies, and says on page 34:

11
12 Now, investors are questioning whether Grubman was motivated by his
13 true opinions – or by the millions of dollars he received from supporting his
14 telecom clique.

15
16 4.) **"HOW TO FIX CORPORATE GOVERNANCE" is the cover**
17 **article in the in the May 6, 2002 issue of Business Week.**

18 Page 76 of this article says:

19
20 If investors have learned anything from this crisis, it's that Wall Street's
21 analysts are often loath to put a bad spin on a stock. Historically, "sell"
22 ratings have constituted fewer than 1% of analysts' recommendations,
23 according to Thompson Financial/First Call...It is more a case of an
24 inherently conflicted system, that is now the focus of a Justice Department
25 investigation.

26
27 ...

1
2 Investors need to realize that the free research they're getting is often just a
3 marketing tool, says Kent Womack, a professor at Dartmouth College's
4 Amos Tuck school of business.

5 **5.) A June 10, 2002 issue of Fortune had an article entitled "In**
6 **Search of the Last Honest Analyst".**

7 The Fortune article noted:

8
9 In fact, stock research sank so low during the bubble that it actually
10 became a contrary indicator of a stock's performance. Researchers at the
11 University of California and Stanford reviewed almost 40,000 stock
12 recommendations from 213 brokerages during the year 2000. The most
13 highly rated stocks had a -31% return for the year, according to the study.
14 Meanwhile, the stocks least favorably recommended (that is, the sells)
15 soared an annualized 49% -- a differential of 80 percentage points³⁹

16
17 **6.) A September 24th, 2002 Wall Street Journal article entitled**
18 **"Will Grubman Case Tone Down the Exaggeration by**
19 **Analysts?"**

20 The article states the following:

21
22 During the 1980s and 1990s, analysts often served as quasi-advocates for
23 companies that hired their firms for investment-banking work,
24 accompanying them on road shows to sell their stock, setting up one-on-
25 one meetings between management and institutional investors, and

³⁹ Fortune.com, "In Search of the Last Honest Analyst", June 2002, at 1 of 2.

1 proffering their access to management to give an unofficial version of the
2 companies' view of business developments⁴⁰.

3
4 7.) On October 22, 2002, the a Wall Street Journal article entitled
5 "Massachusetts Claims CSFB Stock Reports Led Investors
6 Astray" appeared on pages C-1 and C-10.

7
8 Following are some highlights from this article:

9
10 The complaint [by the Secretary of the Commonwealth of Massachusetts]
11 alleges CSFB misled investors by allowing its investment-banking division
12 – in particular, star Frank Quattrone – to exert undue influence on the
13 firm's research department.

14 ...

15 The complaint which echoes one filed earlier this year by Elliott
16 Spitzer against Merrill Lynch & Co. will no doubt add to investor concern
17 that Wall Street peddled research it didn't believe only to get its hands on
18 the much more lucrative investment-banking fees.

19 ...

20 The presumption that every firm engaged in this behavior is fair," says Roy
21 Smith, a professor of finance at New York University and a former partner
22 at Goldman Sachs Group, Inc. It reminds me of how we used to talk in

⁴⁰ Wall Street Journal, "Will Grubman Case Tone Down The Exaggeration by Analysts?", September 24, 2002, at C-1 & C-3.

1 the locker room after a football game. That talk happens all the time, but it
2 would sure be embarrassing if anyone ever recorded it.⁴¹

3
4 **G.) CONCLUSION**

5
6 Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

7 A. Dr. Vander Weide has created a highly imaginative, albeit extreme, three-step
8 process to determine the cost of capital in this case. His cost of capital
9 recommendation so high that if it were adopted, Verizon would earn 31.19% on its
10 equity investment made in UNEs. His three steps to an extreme cost of capital
11 consists of:

12 1.) **Overstating the cost of equity that results form the DCF method.**

13 Dr. Vander Weide has overstated the cost of equity by applying the constant
14 growth version of the DCF model based upon the use of a non-constant growth
15 rate that especially exaggerates the sustainable growth rate because it accepts,
16 without adjustment, analysts' inflated growth rates. The mathematical mistakes and
17 the use of overly-optimistic analysts' forecasts were combined in a way that
18 permitted him to recommend a cost of equity of 13.95% from his DCF method.

19 2.) **Leasing Risk Premium.** As if the 13.95% DCF result was not already
20 sufficiently out of step with reality, Dr. Vander Weide then took this extremely
21 excessive 13.95% result and further increased it by adding a leasing risk premium
22 of 3.95%. He added this premium not to just the cost of equity, but to the overall
23 cost of capital. By adding the leasing risk premium to the cost of capital rather
24 than the cost of equity, the effect on bloating the return on equity is even greater

41 Wall Street Journal, October 22, 2002, at C-1 & C-10.

1 than an already very high and totally unnecessary 3.95%. The actual interest rate
2 paid to the debt-holders remains unchanged even though Dr. Vander Weide's
3 method adds a premium to the debt return as well as to the equity return.

4
5 3.) **Capital Structure Manipulation.** Verizon Communications, Inc. has
6 chosen to finance its telecommunications operations with a capital structure that
7 contains 43.6% common equity. Equity costs more than debt, especially if the cost
8 of debt is related to the astronomical cost of equity recommended by Dr. Vander
9 Weide. If it were possible to overstate the actual percentage of common equity
10 when computing the overall cost of capital, then the actual return earned would be
11 all that much higher. Dr. Vander Weide found a way. Instead of recognizing that a
12 forward-looking capital structure should be the capital structure that good
13 management would implement for the purpose of minimizing its overall cost of
14 capital, and that the capital structure that shows how management raises capital is
15 the book value capital structure, Dr. Vander Weide recommended a capital
16 structure that contained 75% common equity, and 25% long-term debt. He totally
17 ignored short-term debt even though Verizon Communications Inc. has currently
18 obtained 18.80% of its capital from short-term debt. Verizon Communications
19 management is smart to be utilizing short-term debt because its cost of short-term
20 debt is currently about 1.14%. By ignoring this very real and very inexpensive
21 source of capital to Verizon, Dr. Vander Weide has further exaggerated the cost of
22 capital.

23 The above mistakes made by Dr. Vander Weide compound. If he had not
24 started out with such a high result from his DCF method, the impact of the other
25 two mistakes would not have been as dramatic. If he had not added the unrealistic
26 leasing premium, his capital structure error would not have had as great an impact.
27 When these mistakes are all put together, if Dr. Vander Weide's recommendation

1 were to be adopted, Verizon Communications Inc. would be provided with the
2 opportunity to earn 31.19% on its UNE investment. A return of 31.19% is way
3 beyond the level that could ever result in a truly competitive marketplace. It is a
4 return that could only even be asked for by a company with facilities in which the
5 barriers to competition are, in the words of the US Supreme Court “almost
6 insurmountable.”⁴²

7 In order to avoid making a travesty of the regulatory process, Dr. Vander
8 Weide’s testimony must be given no weight.

9
10 Q. DOES THIS COMPLETE YOUR TESTIMONY?

11 A. Yes.

⁴² *Verizon v. FCC*, 122 S.Ct. 1646, 1662 (May 13, 2002)

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JAR EXHIBIT 1

Testifying Experience of James A. Rothschild

**TESTIFYING EXPERIENCE OF JAMES A. ROTHSCHILD
THROUGH DECEMBER 1, 2003**

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Continental Telephone of the South; Docket No. 17968, Rate of Return, January
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12 Artesian Water Company, Inc.; Docket No. 87-3, Rate of Return, August 1987
13 Diamond State Telephone Company; Docket No. 82-32, Rate of Return, November
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16 Wilmington Suburban Water Company; Rate of Return Report, September 1986
17 Wilmington Suburban Water Company; Docket No. 86-25, Rate of Return, February
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22 **FEDERAL ENERGY REGULATORY COMMISSION (FERC)**

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24 Koch Gateway Pipeline Company, Docket No. RP97-373-000 Cost of Capital,
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26 Maine Yankee Atomic Power Company, Docket No. EL93-22-000, Cost of Capital,
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17 **KENTUCKY**

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20 Kentucky Power Company; Case No. 8429, Rate of Return, April, 1982.
21 Kentucky Power Company; Case No. 8734, Rate of Return and CWIP, June, 1983.
22 Kentucky Power Company; Case No. 9061, Rate of Return and Rate Base Issues,
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5 Long Island Lighting Company; Case No. 28176 and 28177, Rate of Return and
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1 JAR EXHIBIT 2

2 Implementation of the DCF Method and
3 the Risk Premium/CAPM Method
4

5 I. DCF Method

6
7 Q. HOW IS THE DCF METHOD USUALLY IMPLEMENTED?

8 A. The DCF method is usually implemented in utility rate proceedings using the
9 constant growth version. It is applied by implementing the following formula:

10
11
$$\text{cost of equity} = \text{dividend yield} + \text{future expected growth}$$

12 Where growth refers to the future sustainable growth rate in dividends,
13 earnings, book value and stock price.
14

15 Q. IS THE DCF MODEL WIDELY USED IN UTILITY RATE PROCEEDINGS?

16 A. Yes. The DCF model has been widely used for many years. From my
17 experience, the constant growth form of the DCF model is more widely used than
18 any other approach to determining the cost of equity.
19

20 Q. IS THE DCF MODEL COMMONLY IMPLEMENTED IN A CONSISTENT
21 MANNER?

22 A. No. The DCF model is widely used and widely abused. Most implementations of
23 the DCF model in utility rate proceedings start out with the same $D/P + g$, or
24 dividend yield plus growth formula. Also, most generally agree that the growth rate
25 “g” must be representative of the constant future growth rate anticipated by
26 investors for dividends, earnings, book value, and stock price. However, all too

often, this important principle is forgotten when it comes time to implement the constant growth DCF formula. Such carelessness causes substantial, unnecessary error when implementing the constant growth version of the DCF model.

Q. WHY IS IT SO IMPORTANT FOR THE GROWTH RATE USED IN THE CONSTANT GROWTH VERSION OF THE DCF MODEL TO BE REPRESENTATIVE OF THE CONSTANT GROWTH RATE FOR DIVIDENDS, EARNINGS, BOOK VALUE AND STOCK PRICE?

A. The derivation of the constant growth formula is based upon the principle that investors buy stock solely for the right to future cash flows obtained as a result of that ownership. The cash flows are obtained through dividend payments and/or stock price appreciation. The constant growth version of the DCF formula will accurately quantify investors' expectations only if investors expect the dividend yield (defined as dividend payment divided by stock price) and the growth in dividends to best be estimated at one constant growth rate for many years into the future. The dividend yield and growth rate that are used in the constant growth formula must be selected carefully. Consider what happens if the expected growth rates are not all equal:

1. DIFFERENT GROWTH RATE FOR EARNINGS AND FOR DIVIDENDS. Both dividends and the ability for a company to grow dividends in the future are directly derived from earnings. The dividend yield, or D/P, portion of the constant growth DCF formula quantifies the investor-derived value from the portion of earnings paid out as a dividend and the "g" portion of the constant growth DCF formula quantifies the value of the portion of earnings retained in the business. If dividends are quantified using the current dividend rate, but an earnings forecast is used to quantify "g" that is based upon a future environment in which earnings are expected to grow more

1 rapidly than dividends, an ever-increasing portion of the total return expected
2 by investors will be attributable to growth and a smaller portion will be
3 attributable to dividends. Under these conditions, other things being equal, the
4 constant growth version of the DCF model would overstate the cost of equity
5 because the decrease in the payout ratio that results from a more rapid earnings
6 growth rate than dividend growth rate would shift a greater portion of the
7 earnings from dividends to earnings growth. The result of this is that the higher
8 future earnings growth rate would cause the portion of earnings available for
9 dividends to be lower, and therefore the dividend yield would be lower.
10 Conversely, if future earnings growth were expected to be less than dividend
11 growth, the constant growth form of the DCF model would understate the cost
12 of equity. Every time a dividend payment is scheduled, the board of directors
13 of a company decides what portion of earnings to pay out as a dividend and
14 what portion of earnings to re-invest, or “retain” in the business. It is this re-
15 investment of earnings that causes sustainable growth. Both dividends and
16 growth therefore compete for the same dollars of earnings. The higher the
17 portion of earnings allocated to the payment of dividends, the smaller the
18 amount of earnings left over for re-investment and therefore the lower the
19 future growth rate. The relationship between the portion of earnings paid out as
20 a dividend and the portion re-invested in the business is commonly referred to
21 as either the dividend “payout” ratio (which is computed by dividing dividends
22 by earnings), or the “retention rate” (which is computed by dividing the portion
23 of earnings re-invested in the business by earnings). The sum of the payout
24 ratio and the retention rate is 1.0, or 100% because 100% of earnings are
25 either paid out as a dividend or retained in the business. The constant growth
26 version of the DCF formula uses a specific dividend rate to compute the “D/P”
27 term of its formula. This specific dividend rate has specific earnings “retention

rate” associated with it. This specific “retention rate” provides for one and only one percentage of earnings that remains to cause the growth that is quantified in the second term of the equation. This is because the portion of earnings paid out as a dividend and the portion not paid out as a dividend must remain equal to total earnings. Consider what happens if the dividend “payout ratio” or the earnings “retention” ratio are not constant. If they are not constant, the portion of earnings available for growth and the portion available for dividends will continue to shift over time, but under such conditions the constant growth formula produces an erroneous result because it is incapable of properly accounting for this change.

2. EARNINGS PER SHARE GROWTH RATE DIFFERENT FROM STOCK PRICE GROWTH RATE. When earnings per share growth rates are measured over a relatively short time period such as the five-year consensus growth rates compiled by services such as Zacks and I/B/E/S, it is likely that investors expect materially different growth rates in earnings per share and stock price. This is because the earnings per share growth rate as reported in such services is simply the compound annual growth rate in the earnings per share from the most recently completed fiscal year to the earnings per share forecast for five years into the future. Presumably, an earnings per share forecast for five years into the future is sufficiently far off that analysts’ forecasts for that time period must be based upon an expectation of normal conditions. Five years into the future is too far off to forecast abnormal economic conditions, abnormal weather conditions, or any abnormal operating problems that could impact earnings. However, the base year from which earnings are forecast is likely to contain some abnormalities that have an impact on earnings. To the extent this abnormality exists, the

1 forecast of earnings per share growth from the base year to a period five
2 years in the future will be equal to the sustainable growth rate plus or minus
3 the impact of any abnormalities. Growth that is required to bring earnings up
4 to or down to normally expected conditions is not sustainable growth and
5 therefore it is not the kind of growth that would be mirrored in the stock price
6 growth rate.

7
8 3. DIFFERENT GROWTH RATE FOR EARNINGS AND FOR
9 BOOK VALUE. The return on book equity is computed by dividing earnings
10 by book value. This is an important number for several reasons: a) for a
11 regulated utility company, the allowed cost of equity is the return on book
12 equity that a utility commission intends for a company to earn on the regulated
13 portion of its business, and b) unregulated companies attempt to earn the
14 highest risk adjusted returns on equity that are possible. If earnings per share
15 grow more rapidly than book value per share, the return on equity increases.
16 Conversely, if earnings per share grow more slowly than book value per
17 share, the return on equity decreases. While increases and/or decreases in the
18 earned return on equity can and do occur, it is not credible to forecast a
19 sustained change in the return on equity for the many years into the future that
20 are required in the constant-growth DCF model. A forecasted continuation of
21 a decrease in the earned return on equity would eventually drive the earned
22 return on equity to near zero – a condition that is not credible for a regulated
23 business providing a needed service. Similarly, a forecasted continuation of
24 an increase in the earned return on equity would eventually drive the earned
25 return on equity to an extremely high number – a condition that would not
26 form the basis for a credible growth rate forecast for a regulated business
27 because of the regulatory constraints on the authorized return. Similarly, an

earnings per share growth rate higher than the book value per share growth rate is not credible for a competitive business because, as returns would go higher and higher, more and more competitors would be attracted. If a growth rate based upon an earning per share forecast higher than the forecast book value per share growth rate were used in a constant-growth form of the DCF model, then the constant-growth version of the DCF model would contain an upward bias. Conversely, if an earnings per share forecast that is lower than the book value per share growth rate, then the constant-growth form of the DCF model would contain a downward bias.

Q. ARE FIVE-YEAR EARNINGS PER SHARE FORECASTS OF THE TYPE AVAILABLE FROM SOURCES SUCH AS ZACKS, I/B/E/S, AND VALUE LINE SUITABLE AS A PROXY FOR LONG-TERM SUSTAINABLE GROWTH IN THE CONSTANT-GROWTH FORM OF THE DCF MODEL?

A. No. For the above reasons, it is improper to directly use a five-year earnings per share forecast as a proxy for long-term sustainable growth in the constant-growth DCF model. No attempt is made for these earnings per share forecasts to be representative of the anticipated growth rate in dividends per share, book value per share, or stock price. Therefore, these sources can be used to develop a sustainable growth rate in the context of a constant-growth DCF model, but if used directly as a proxy for long-term growth they are no more accurate than it would be to forecast the height of a human at age 60 based upon a reasonable forecast of annual growth for the five years starting at age 12. These earnings per share forecasts are generally different from the anticipated growth in dividends, book value, and stock price because they include the often substantial impact of bringing earnings up or down to a normal earned return on equity from whatever return on equity was achieved in the most recently completed fiscal year. Additionally, such

analysts' growth rates tend to be overstated because of the well-documented propensity for analysts to be optimistic.⁴³ The combined effect of the habitual optimism and the required movement over a relatively short five-year time period to bring earnings per share up to the optimistic levels causes five-year analysts' growth rates to commonly overstate the future sustainable growth rate. As noted earlier, an October 4, 2001 report issued by Credit Suisse First Boston noted that analysts' estimates "... have on average been 6% too optimistic 12 months prior to a reporting date."⁴⁴ As a result, DCF approaches that rely upon the direct use of analysts' five-year growth rates repeatedly overstate the cost of equity.

10

11 Q. HOW IS IT POSSIBLE TO ENSURE THAT THE GROWTH RATE USED IN
12 THE CONSTANT-GROWTH VERSION OF THE DCF MODEL WILL
13 RESULT IN A CONSTANT GROWTH RATE INDICATOR FOR
14 DIVIDENDS, EARNINGS, BOOK VALUE, AND STOCK PRICE?

15 A. The most straight-forward and most accurate way to make this computation is to
16 use the formula " $b \times r + sv$ " formula, where b = the earnings retention rate, r = the

⁴³ While there are many sources that have shown this optimism to exist, one noteworthy source is a statement by Arthur Levitt, former chairman of the U.S. Securities and Exchange Commission. The following appeared on page 4 of the 5/31/99 issue of Barrons:

ARTHUR LEVITT MAY BE THE best chairman of the SEC since Joe Kennedy. And no accident, really: Like Kennedy, Levitt spent enough time in the Street to develop a fine nose for good stocks and bad people.

Back in April, Levitt delivered some cogent remarks on analysts (in the sacred order of being, they're somewhat lower than angels) and their innate bullishness (solely the product of their sunny natures). As he observed, sell recommendations make up 1.4% of all analysts' recommendations, while buys represent 68%.

By way of explanation for this strange imbalance, he offers the possibility of a "direct correlation between the content of an analyst's recommendation and the amount of business his firm does with the issuer."

Analysts, he grouches are too eager to see every frog of a stock as a prince. What the world needs, he laments, are analysts who call a frog a frog.

⁴⁴ *Weekly Insights*, "Global Strategy Perspectives", October 4, 2001, page 58.

1 future expected return on book equity, and sv is a factor that accounts for
2 sustainable growth caused by the sale of new shares of common stock. The
3 mathematics in support of the derivation of the DCF model show that the " $b \times r +$
4 sv " formula should be used to quantify sustainable growth. Common mistakes with
5 this formula include using historic values of " $b \times r$ " and/or of " sv " rather than future
6 expected values, and most importantly by failing to realize that in order for the
7 formula to be applied properly, the retention rate value, " b " must be determined in
8 a manner that is consistent with the other values input into the DCF model. This is
9 a critical step necessary to ensure that the portion of the future expected earnings
10 that have been allocated to dividends is consistent with the future expected earnings
11 level that is used to compute growth. This is the way to be sure that the retention
12 rate used to compute the dividend yield portion of the constant-growth portion of
13 the DCF model is the same as the retention rate used to compute growth. If the
14 two are not equal, then the total amount of future expected earnings allocated in
15 aggregate to dividends and to growth will be something other than 100% of
16 earnings. An approach that accounts for something other than 100% of earnings in
17 the cost of equity computation will result in an invalid result.

18 The way to ensure the consistency necessary for a valid result from the
19 implementation of the constant-growth form of the DCF model is to compute the
20 retention rate " b " based upon the inputs used for the dividend rate " D " and the
21 future expected return on equity, " r ". This computation is straight-forward. By
22 definition the retention rate " b " is equal to the portion of dividends not paid out as a
23 dividend divided by earnings. The earnings consistent with the value used for " D "
24 is computed by multiplying book value as of the time of the determination of " D " by
25 the value of " r ". The result is the future expected rate of earnings that is consistent
26 with the value used for " D ". By subtracting " D " from the future expected earnings
27 consistent with the value used for " r " and dividing that amount by the earnings

1 consistent with the value chosen for “r” results in a retention rate that contains the
2 necessary consistency. If any other value for “b” is used, such as a forecasted
3 value for “b” in some future time period, then the result from the constant-growth
4 DCF computation would be invalid.

5

6 Q. HOW DID YOU APPLY THE DCF MODEL IN THIS CASE?

7 A. I applied the DCF method two different ways. One way is a single-stage, or
8 constant growth DCF model in which I added a growth rate that was carefully
9 constructed to meet the rigorous requirements of the constant growth formula.
10 The second DCF analysis is a multi-stage method, but I do not put much weight on
11 the results of the multi-stage result because of the high return on equity (higher than
12 I believe investors expect) in years 2002 to 2006. Both approaches to the DCF
13 method are dependent upon an estimate of what common equity investors expect
14 for future cash flow. Any company creates a future cash flow for its equity
15 investors by investing funds in assets that are needed by its business. The future
16 cash flow rate is therefore dependent upon the rate at which the funds invested by
17 the equity investors is able to earn. The rate at which they are able to earn is
18 referred to as the return on book equity.

19

20 Q. HOW DID YOU DETERMINE THE FUTURE RETURN ON BOOK EQUITY
21 ANTICIPATED BY INVESTORS?

22 A. I examined both the historic actual returns earned on average by the comparative
23 group of telecommunications companies and the future return on equity forecast by
24 Value Line. I also considered the general pessimism in the telecommunications
25 industry, and how rapidly Value Line’s forecasted return on book equity is
26 declining.

27

1 Value Line forecasts that, on average, the telecommunications industry will
2 earn 12% on book equity in its October 3, 2003 issue. As shown on JAR
3 Schedule 3, Page 2, the Value Line expected return on book equity forecast for
4 the comparative group of RBOCs is 15.83%, which is considerably less than the
5 19.71% earned on average by these companies in 2002. The return on book
6 equity consistent with the Zacks' consensus growth rate was 16.77%. Just in the
7 three months ended October 3, 2003, Value Line lowered the return on book
8 equity it expects Verizon will earn in 2006-2008 from 17.5% down to 16.5%.

9

10 Q. HOW WOULD KNOWLEDGEABLE INVESTORS VIEW THE ABOVE
11 DATA?

12 A. Knowledgeable investors would start by questioning if the forecasted earned return
13 on equity from 2003 is possible in light of the difficulties in the telecommunications
14 industry. In view of the well documented and widely publicized view that analysts
15 tend to be overly optimistic about future earnings, and the knowledge that lower
16 interest rates are likely to mean lower allowed return on equity in the future than
17 were allowed in the past, most knowledgeable investors would not find the
18 forecasted return on equity to be a credible estimate of the earned return on book
19 equity level that is sustainable into the future.

20 As time passes and the telecommunications industry becomes more fully
21 competitive, the return on equity earned by Verizon and the other RBOCs should
22 become closer to that earned by the overall telecommunications industry.
23 Averaging the 15.83% for the RBOCs with the 12.00% forecast for the industry
24 produces 13.92%. To arrive at the future return on book equity used to compute
25 sustainable growth, when comparing the growth expectations to the current stock
26 price, I estimated that investors expect a future return on book equity of 16.00%.

27

1 Q. YOU SAID THAT ANALYSTS' ESTIMATES ARE WELL KNOWN TO
2 HAVE A TENDENCY TO BE HIGH. PLEASE PROVIDE YOUR BASIS
3 FOR THAT CONCLUSION.

4 A. In addition to the statements from former Securities Exchange Commission
5 chairman Arthur Levitt, and the statements in a recent report from Credit Suisse
6 First Boston that I have referenced earlier in this testimony, other noteworthy
7 sources include an article that appeared on the first page of the September 3, 2001
8 issue of the Financial Times. This article, entitled "HSBC shakes up research"
9 begins by saying:

10

11 HSBC is radically restructuring its investment research in a sign that banks
12 are responding to criticism of the quality of equity analysis.

13 The bank's analysts will be required to publish as many "sell"
14 recommendations on stocks as "buys" and HSBC will invest its own money in its
15 best research ideas. The move is in response to criticism that investment banks'
16 analysts are too positive about companies in the hope of generating lucrative
17 corporate finance work.

18 Criticism has been particularly strong in the US, where many banks
19 continued to talk up technology shares at the peak of the market. The banks are
20 facing a wave of litigation from investors who lost money by following analysts'
21 recommendations. Merrill Lynch recently paid \$400,000 to a client to drop an
22 action against Henry Blodget, its star internet analyst.

23 Banks have also been attacked by US regulators and politicians.

24

25 An article appeared in the November 18, 2001 edition of the New York
26 Times, on the first page of the Sunday business section 3. This article, entitled
27 "Telecom's Pied Piper: Whose Side Was He On?" is an article about Salomon

1 Smith Barney telecommunications analyst Jack Benjamin Grubman, "... one of
2 Wall Street's highest-paid analysts...". The article then says:

3
4 Anyone can make mistakes, but Mr. Grubman's cheerleading epitomizes
5 the conflict-of-interest questions that have dogged Wall Street for two years: Even
6 as he rallied clients of Salomon Smith Barney, a unit of **Citigroup**, to buy shares of
7 untested telecommunications companies and to hold on to the shares as they lost
8 almost all of their value, he was aggressively helping his firm win lucrative stock and
9 bond deals from these same companies.

10 Since 1997, Salomon has taken in more investment banking fees from
11 telecom companies than any other firm on the Street. Because of Mr. Grubman's
12 power and prominence, and because his compensation is based in part on fees the
13 company generated with his help, a part of those fees went to him.

14
15 The demise of Enron has caused investors has served to substantially
16 reinforce investors' mistrust of analysts. Consider the impact on investors when
17 they read the article entitled "The Analyst Who Warned About Enron" that
18 appeared on pages C1 and C17 of the 1/29/02 edition of the Wall Street Journal.
19 The article explains that "Financial Analysts who tracked Enron Corp. have taken a
20 pounding for being company 'shills' and for failing to concede they didn't fully
21 understand the Houston energy-trading concern's complex finances." Then, the
22 article explains one exception was bond analyst Daniel Scotto who told clients
23 back in August that Enron securities "should be sold at all costs and sold now"
24 Instead of his accurate recommendation resulting in him getting a promotion, it
25 resulted in him being fired. As the article explains,:

1 Mr. Scotto's experience highlights one of the oldest pressure points on
2 Wall Street involving financial analysts, who traditionally act as a filter between
3 investors and the financial markets. During the past decade, Wall Street securities
4 firms increasingly have pushed their research analysts to actively trumpet stocks
5 and bonds, not impartially analyze them.

6 The side benefits to the securities firms can be enormous: If an analyst touts
7 a company's securities, the securities firm stands a greater chance at becoming an
8 adviser to that company, and garnering the fees that will follow. Nowadays,
9 analysts can be stars, receiving bonuses of several hundred thousand dollars for
10 helping their firm to win big underwriting deals. Bash the securities of a corporate
11 client, though, and the securities firm could be shut out of lucrative deals. Enron
12 issued billions of dollars worth of securities in recent years, generating huge fees for
13 its financial advisers and bankers.

14
15 Because of articles like these, others that have appeared over the years, and
16 knowledge gained from personal experience, knowledgeable investors know that
17 analysts' forecasts have a strong tendency to be overly optimistic.

18
19
20 b) Implementation of Single-stage DCF

21
22 Q. HOW DID YOU IMPLEMENT THE SINGLE-STAGE OR CONSTANT
23 GROWTH DCF IN THIS CASE?

24 A. I started by taking the current quarterly dividend rate for each company examined
25 and multiplying it by 4 to arrive at the current annual rate. This number was then
26 converted to a dividend yield by dividing it by the stock price of each company.
27 The stock price used was determined two different ways. One way was to take

1 the actual stock price as of December 31, 2003. The second way was to take the
2 average of the high and low stock price for the year ended December 31, 2003.
3 Then, the dividend yield was increased by adding one-half the future expected
4 growth rate. This upward adjustment to the dividend yield is necessary because
5 the DCF formula specifies that the dividend yield to be used is equal to the
6 dividends expected to be paid over the next year divided by the market price.
7 After this adjustment to increase the dividend yield, the yield is equal to an estimate
8 of dividends over the next year. Each dividend yield was then increased to allow
9 for dividend growth over the next year. This was accomplished by adding one-half
10 the future expected growth rate to the current dividend. After the adjustment, the
11 final dividend yield that I used is equal to an estimate of dividends over the next
12 year.⁴⁵

13
14 Q. HOW DID YOU OBTAIN THE GROWTH RATES YOU USED IN THE
15 CONSTANT GROWTH, OR $k = D/P + G$, VERSION OF THE DCF
16 METHOD?

17 A. I derived the growth rates from the internal, or retention growth rate, or "b x r"
18 method where "b" represents the future expected retention rate and "r" represents
19 the future expected earned return on book equity. In addition to the "b x r" growth
20 caused by the retention of earnings, I added an amount to recognize that growth is
21 also caused by the sale of new common stock in excess of book value. A critical
22 requirement in the implementation of the simplified version of the DCF model is that
23 the estimate of the future expected growth rate be a growth rate that is expected to
24 be sustained, on average, for many years into the future. Stock analysts and

⁴⁵ The complex version does not directly use dividend yields. Instead, it determines the present value of each dividend payment as a discounted cash flow.

1 textbooks recognize that generally the most accurate way to estimate the
2 sustainable growth rate in a constant growth DCF method is to use what is usually
3 referred to as the retention growth, or "b x r" method. In this approach, the future
4 expected retention rate "b" is multiplied by the future expected return on book
5 equity "r" in order to obtain a sustainable growth rate. Other methods to estimate
6 future sustainable growth are sometimes used. However, those methods are
7 generally more subjective, and even if used with extreme care, do not have the
8 same potential for accuracy that a properly applied "b x r" estimate has. In order
9 to produce a meaningful result, whichever growth rate method is used in the
10 constant growth version of the DCF method must be a constant growth rate. The
11 non- b x r growth rate methods must be adjusted to eliminate factors which would
12 otherwise cause them to include non-recurring influences on growth. Unless the
13 growth rates obtained from these alternative methods are adjusted to make the
14 result equally representative of the future average expected growth in earnings,
15 dividends, book value, and stock price, they are invalid for use in the constant
16 growth form of the DCF model.

17 The "b x r" method is best implemented by multiplying the future expected
18 return on book equity by the retention rate that is consistent with both the future
19 expected return on book equity and the dividend rate used to compute the
20 dividend yield. Also, future sustainable growth should include an increment of
21 growth to allow for the impact of sales of new common stock above book value.

22 The "b x r" growth rate computation, unless adjusted, does not account for
23 sustainable growth that is caused by the purchase or sale of common stock above
24 book value. Therefore, I modified the "b x r" growth rate to account for this
25 additional growth factor. This additional growth factor, which is a standard part of
26 the DCF computation, is sometimes referred to as the "VS" growth.

1 An accurate estimate for the future sustainable value of "r" (return on
2 equity) when multiplied by a value for "b" (retention rate) that is consistent with the
3 selection of the dividend rate and the expected return on book equity, produces a
4 growth rate that is constant and sustainable.

5
6 Q. DO STOCK ANALYSTS USE THE "b x r" METHOD?

7 A. Yes. In the textbook, Investments, by Bodie, Kane and Marcus (Irwin, 1989) at
8 page 478, expected growth rate of dividends is described as follows:

9
10 How do stock analysts derive forecasts of g, the expected growth
11 rate of dividends? Usually, they first assume a constant dividend payout ratio
12 (that is, ratio of dividends to earnings), which implies that dividends will grow
13 at the same rate as earnings. Then they try to relate the expected growth rate
14 of earnings to the expected profitability of the firm's future investment
15 opportunities.

16 The exact relationship is

17
18
$$g = b \times \text{ROE}$$

19
20 where b is the proportion of the firm's earnings that is reinvested in the
21 business, called the **plowback ratio** or the **earnings retention ratio**, and
22 ROE is the rate of return (return on equity) on new investments. If all of the
23 variables are specified correctly, [the] equation . . . is true by definition, . . .

1 Q. HOW DID YOU COMPUTE “g”?

2 A. As previously stated, I used the “b x ROE” method specified in the above
3 textbook quote, although I refer to it in this testimony as the “b x r” method. In the
4 above equation, ROE has the same meaning as “r”. I recognized that investors have
5 both historical and forecasted information available to determine the future return
6 on book equity expected by investors. Forecasted data includes not only specific
7 data for a company being evaluated, but also includes overall industry forecasted
8 data. In addition to “b x r” growth, I included a factor to allow for growth caused
9 by the sale of new common stock at a price other than book value.

10 I have reflected the impact on growth caused by the sale or repurchase of
11 common stock in my recommended growth rate. The computations in support of
12 this estimate are shown on JAR Exhibit 3, Schedule 8.

13

14 Q. THERE ARE COST OF CAPITAL WITNESSES WHO CLAIM THAT THE
15 “b x r” METHOD IS SOMEHOW CIRCULAR. THIS IS BECAUSE THE
16 FUTURE EARNED RETURN ON BOOK EQUITY THAT YOU USE TO
17 QUANTIFY GROWTH IS USED TO DETERMINE THE COST OF EQUITY,
18 AND THE COST OF EQUITY IS THEN USED TO DETERMINE THE
19 FUTURE RETURN ON EQUITY THAT WILL BE EARNED. IS THIS
20 CIRCULAR?

21 A. No. Those who erroneously claim that the method is circular confuse the definition
22 of “r” and the definition of “k”. While “r” is defined as the future return on **book**
23 equity anticipated by investors, “k” is the cost of equity, or the return investors
24 expect on the **market price** investment. Since the market price is determined
25 based upon what investors are willing to pay for a stock, and the book value is
26 based upon the net stockholders’ investment in the company, “r” usually has a
27 different value than “k”. In fact, the proper application of the DCF method relates

1 a specific stock market price to a specific expectation of future cash flows that is
2 created by future earned return (“r”) levels. For example, assume investors are
3 willing to pay \$10 a share for a company when the expectations are that the
4 company will be able to earn 12% on its book equity in the future. If events would
5 cause investors to re-evaluate the 12% return expectation, the stock price should
6 be expected to change. If investors’ expectations of the future return on book
7 equity change from 12% to 10%, and there is no corresponding change in the cost
8 of equity, the stock price would decline. The cost of equity, however, would not
9 decline simply because an event might occur that would cause investors to lower
10 their estimate for “r”. The cost of equity is equal to the sum of both the dividend
11 yield and growth. Investors’ estimate of “r” influences the investors’ estimate for
12 growth. Changes in growth expectations cause investors to change the price they
13 are willing to pay for stock. A change in the stock price can cause a change in the
14 dividend yield that offsets the change in expected growth. In this way, a higher
15 dividend yield would offset by the lower expected growth rate and leave the cost
16 of equity, “k”, unchanged.

1 Determination of the future return on equity "r"

2 Q. HOW DID YOU DETERMINE THE VALUE OF "r" THAT YOU USED IN
3 YOUR RETAINED EARNINGS GROWTH COMPUTATIONS?

4 A. My estimate for "r" for the comparative group of telecommunications companies is
5 16.00% The value of "r" that is required in the DCF formula is the one that is
6 sustainable into the future for much longer than 5 years.

7

8 Determination of Retention Rate, "b"

9

10 Q. HOW HAVE YOU DETERMINED THE VALUE OF THE FUTURE
11 EXPECTED RETENTION RATE "b" THAT YOU USED IN YOUR
12 SIMPLIFIED DCF ANALYSIS?

13 A. I have recognized that the retention rate, "b", is merely the residual of the dividend
14 rate, "D", and the future expected return on book equity, "r." Since, by definition,
15 "b" is the fraction of earnings not paid out as a dividend, the only correct value to
16 use for "b" is the one that is consistent with the quantification of the other variables
17 when implementing the DCF method. The formula to determine "b" is:

18

19
$$b = 1 - (D/E), \text{ where}$$

20
$$b = \text{retention rate}$$

21
$$D = \text{Dividend rate}$$

22
$$E = \text{Earnings rate}$$

23

24 However, "E" is equal to "r" times the book value per share. Book value
25 per share is a known amount, as is "E", consistent with the future expected value
26 for "r", and the "D" used to compute dividend yield. Therefore, to maximize the
27 accuracy of the DCF method, quantification of the value of "b" should be done in a

1 manner that recognizes the interdependency between the value of "b" and the
2 values for "r" and "D". I directly computed the value of "b" based upon the values
3 of "D", and "r".
4

5 Q. WHAT RETENTION RATES DID YOU USE IN THE SINGLE-STAGE DCF
6 METHOD?

7 A. Based upon the above formula, I used a retention rate for application to the
8 comparative telecommunications companies of 26.93% to 47. 67% ... See JAR
9 Schedule 5, P. 1.
10

11 c) Implementation of Multi-stage DCF
12

13 Q. HOW DID YOU IMPLEMENT THE MULTI-STAGE DCF METHOD?

14 A. The first stage of the model is based upon Value Line's estimates of dividends per
15 share and earnings per share for 2002 through 2006⁴⁶ for the companies
16 examined. Value Line does not show a specific earnings and dividend projection
17 for every year from 2000 to 2005. Projections for years skipped by Value Line
18 were made by extrapolation from the available data. When implementing this
19 method, I mechanically used Value Line's projections for the period in which the
20 projections were available.

21 I determined future earnings in the second stage of the non-constant DCF
22 model by multiplying the future book value per share by the future expected earned
23 return on book equity. For the purposes of this case, I used the same future
24 expected return on book equity that I used in the simplified version of the DCF

⁴⁶ The estimate for 2006 is shown by Value Line as its estimate from 2006-2008.

1 model.⁴⁷ Projected book value equals the beginning book value plus the current
2 year's earnings minus the current year's dividends. Book value growth projections
3 also include the effect of sales of new common stock. The projections in the
4 second stage of the DCF model were made for 40 years into the future. Events
5 longer than 40 years into the future have a minimal present value.⁴⁸

6 My projections have relied on a constant dividend payout ratio for the
7 second stage⁴⁹. The future constant dividend payout ratio was set equal to the
8 payout ratio in the constant DCF model.

9 I derived the estimated future stock price from the projected book value
10 using the same market-to-book ratio at the time of sale as exists today. The only
11 cash outflow is the price paid for the stock. The non-constant version of the model
12 uses both the spot stock price as of December 31, 2003, and the average stock
13 price for the year ended December 31, 2003 to be representative of the price
14 paid.

15 The retention rate used in the second-stage was set equal to the retention
16 rate derived from the single-stage DCF. The derivation was used because the
17 decline in the earned return on equity anticipated by investors should be expected
18 to result in a reduction of the future expected retention rate. A decline in the return

⁴⁷ For reasons explained in the discussion of the simplified version of the DCF method, I believe this provides the best estimate of future earnings. However, if the use of a varying array of future expected returns on book equity were supported by the facts, rather than a constant return, the same mathematical model would still be proper to use in determining the cost of equity.

⁴⁸ For example, a change in an assumption that the selling market-to-book would be 0.1 lower or higher than as of the time of purchase would introduce a potential inaccuracy in the indicated cost of equity of plus or minus about 25 basis points in a 30-year analysis, but a similar change in the market-to-book ratio expectation would introduce only plus or minus about 15 basis points in a 40 year analysis. If longer than 40 years were used, the result would be even less sensitive to the future market-to-book ratio expectation.

⁴⁹As in the case of the future expected earned return on equity assumption, if there were evidence to support the use of varying payout ratios instead of a constant payout ratio, the same model could still be used to accurately quantify the cost of equity. Unlike the simplified DCF model, this model specifically accounts for the fact that a change in the payout ratio has an impact on the book value, and therefore has an impact on the earnings rate achieved in the future.

1 on equity will result in a decline in the retention rate unless companies cut the
2 dividend rate.

3 The results for the complex, or multi-stage DCF are shown on JAR
4 Schedule 2. As said earlier in my testimony, the result of multi-stage analysis
5 should be expected to overstate the cost of equity because value lines' future
6 expected return on equity from 2002 to 2006 is much higher than investors expect.
7 The simple, or single stage analysis also uses the 16.00% expected return on equity
8 in the analysis based upon the most current stock prices.

9
10 Q. WHAT COST OF EQUITY IS INDICATED BY THE IMPLEMENTATION
11 OF THE DCF METHOD IN THIS CASE?

12 A. As shown on **Schedule 2**, the cost of equity indicated by the DCF method was
13 estimated to be between 8.48% and 9.30% for the group of telecommunications
14 companies. The wide band of results for the telecommunications companies is the
15 result of the greater difficulty of determining what investors expect for the future for
16 telecommunications companies.

17 **C. RISK PREMIUM/CAPM METHOD**

18
19 Q. PLEASE EXPLAIN THE RISK PREMIUM/CAPM METHOD.

20 A. The risk premium/CAPM method estimates the cost of equity by analyzing the
21 historic difference between the cost of equity and a related factor such as the rate of
22 inflation or the cost of debt.

23 One critically important fact to understand when implementing the risk premium
24 method is that risk premiums have declined in recent years. As mentioned earlier in
25 this testimony, Federal Reserve Chairman Alan Greenspan, made a speech on
26 October 14, 1999 entitled "Measuring Financial Risk in the Twenty-first Century".

1 The text of the speech is available at
2 <http://www.bog.frb.fed.us/boarddocs/speeches/1999/19991014.htm>. In the speech,
3 Chairman Greenspan stated:
4

5 That equity risk premiums have generally declined during the past decade is
6 not in dispute. What is at issue is how much of the decline reflects new,
7 irreversible technologies, and what part is a consequence of a prolonged
8 business expansion without a significant period of adjustment. The
9 business expansion is, of course, reversible, whereas technological
10 advancements presumably are not.
11

12 Q. IS CHAIRMAN GREENSPAN'S VIEW OF THE REDUCTION IN RISK
13 PREMIUMS CONSISTENT WITH WHAT INVESTORS NOW
14 GENERALLY EXPECT?

15 A. Yes. One good source to confirm that the financial community shares Chairman
16 Greenspan's conclusion is an article that appeared in the April 5, 1999 issue of
17 Business Week:
18

19 The risk premium is the difference between the risk-free interest rate,
20 usually the return on U.S. Treasury bills, and the return on a diversified
21 stock portfolio. Over more than 70 years, the return to stocks averaged
22 11.2%, and T-bills, just 3.8%. The difference between the two returns,
23 7.4%, is the risk premium. Economists explain this extra return as an
24 investors' reward for taking on the greater risk of owning stocks. **Most**
25 **market watchers believe that in recent years, the premium has**
26 **fallen to somewhere between 3% and 4% because of lower inflation**

1 **and a long business upswing that makes corporate earnings less**
2 **variable.**

3 [emphasis added]

4

5 On October 4, 2001, the previously referenced report from Credit Suisse
6 First Boston concluded that the equity risk premium over treasury bonds is 3.7%,
7 and the equity risk premium over Baa rated corporate bonds is now 1.9%.⁵⁰

8

9

10 b) Inflation Risk Premium Method.

11

⁵⁰ Weekly Insights, “Global Strategy Perspectives”, October 4, 2001, Credit Suisse First Boston, page 55 and 61.

1 Q. HOW HAVE YOU APPLIED THE INFLATION PREMIUM METHOD?

2 A. I implemented the inflation premium method by adding investors' current
3 expectation for inflation to the long-term rate earned by common stocks net of
4 inflation. This result was modified, based upon beta, to obtain a result that was
5 compatible with the risk of the average gas distribution utility.

6

7 Q. WHAT IS THE BASIS FOR THE INFLATION PREMIUM METHOD?

8 A. A book entitled *Stocks for the Long Run*⁵¹ examined the real returns achieved by
9 common stocks from 1802 through 1997. The conclusion in the book is that equity
10 returns in excess of the inflation rate have been very similar in all major sub-periods
11 between 1802 and 1997, while the risk premium in between bonds and common
12 stocks has been erratic. Page 11 of this book states:

13

14 Despite extraordinary changes in the economic, social, and political
15 environment over the past two centuries, stocks have yielded between 6.6
16 and 7.2 percent per year after inflation in all major subperiods.

17

18 The book then says on page 12:

19

20 Note the extraordinary stability of the real return on stocks over all major
21 subperiods: 7.0 percent per year from 1802-1870, 6.6 percent from 1871
22 through 1925, and 7.2 percent per year since 1926. Ever since World
23 War II, during which all the inflation in the U.S. has experienced over the
24 past two hundred years has occurred, the average real rate of return on

⁵¹ *Stocks for the Long Run* by Jeremy J. Siegel, Professor at Wharton. McGraw Hill, 1998. According to the book cover, Professor Siegel was "... hailed by Business Week as the top business school professor in the country...".

1 stocks has been 7.5 percent per year. This is virtually identical to the
2 previous 125 years, which saw no overall inflation. This remarkable
3 stability of long-term real returns is a characteristic of mean reversion, a
4 property of a variable to offset its short-term fluctuations so as to produce
5 far more stable long-term returns.

6 Continuing on page 14, Stocks for the Long Run says:

7
8 As stable as the long-term real returns have been for equities, the
9 same cannot be said of fixed-income assets. Table 1-2 reports the nominal
10 and real returns on both short-term and long-term bonds over the same
11 time periods as in Table 1-1. The real returns on bills has dropped
12 precipitously from 5.1 percent in the early part of the nineteenth century to
13 a bare 0.6 percent since 1926, a return only slightly above inflation.

14 The real return on long-term bonds has shown a similar pattern.
15 Bond returns fell from a generous 4.8 percent in the first sub period to 3.7
16 percent in the second, and then to only 2.0 percent in the third.

17
18 The book explains some of the reasons why bond returns have been especially
19 unstable. Page 16 says:

20
21 The stock collapse of the early 1930's caused a whole generation
22 of investors to shun equities and invest in government bonds and newly-
23 insured bank deposits, driving their return downward. Furthermore, the
24 increase in the financial assets of the middle class, whose behavior towards
25 risk was far more conservative than that of the wealthy of the nineteenth
26 century, likely played a role in depressing bond and bill returns.

Moreover, during World War II and the early postwar years, interest rates were kept low by the stated bond support policy of the Federal Reserve. Bondholders had bought these bonds because of the widespread predictions of depression after the war. This support policy was abandoned in 1951 because low interest rates fostered inflation. But interest rate controls, particularly on deposits, lasted much longer.

The book then provides a conclusion on page 16 that:

Whatever the reason for the decline in the return on fixed-income assets over the past century, it is almost certain that the real returns on bonds will be higher in the future than they have been over the last 70 years. As a result of the inflation shock of the 1970's, bondholders have incorporated a significant inflation premium in the coupon on long-term bonds.

Q. IS IT POSSIBLE TO ACCURATELY QUANTIFY INVESTORS' CURRENT EXPECTATIONS FOR INFLATION?

A. Yes. It has recently become possible to analytically determine investor's expectations for inflation. The U.S. government has issued inflation-indexed treasury bonds. The total return received by investors in these bonds is a fixed interest rate plus an increment to the principal based upon the actual rate of inflation that occurs over the life of the bond. These bonds pay a lower interest rate simply because investors know that in addition to the interest payments, they will receive the allowance for inflation as part of the increment to the principal. This is in contrast to conventional U.S. treasury bonds. The principal amount of a conventional bond does not change over the life of the bond. Therefore, whatever allowance for inflation investors believe they need can only be obtained through the

1 interest payment. By comparing the interest rate on conventional U.S. treasury
2 bonds with the interest rate on inflation-indexed U.S. treasury bonds, the future
3 inflation rate anticipated by investors can be quantified.

4
5 Q. WHAT IS THE CURRENT INFLATION EXPECTATION OF INVESTORS?

6 A. As of August 2002, the inflation expectation of investors was estimated to be about
7 3.00%. See JAR Schedule 6. This was obtained by observing that long-term
8 inflation-indexed treasury securities were yielding 2.24%, while long-term non
9 inflation-indexed treasury securities were yielding 5.07%. The difference between
10 5.07% and 2.24% is 2.83%. This result was rounded up to 3.00%. Adding this
11 3.00% inflation expectation to the 6.6% to 7.0% range produces an inflation risk
12 premium indicated cost of equity of 9.6% to 10.00% for an equity investment of
13 average risk.

14
15
16 c) Debt Risk Premium Method

17
18 Q. HOW DID YOU DETERMINE THE COST OF EQUITY USING THE DEBT
19 RISK PREMIUM METHOD?

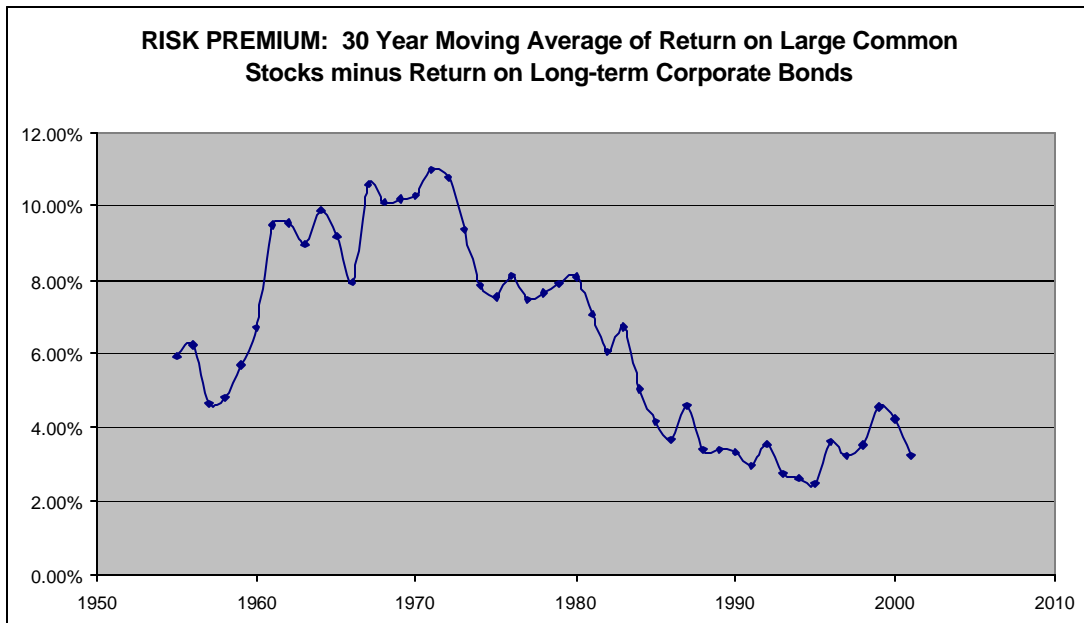
20 A. As shown on JAR Schedule 7, I separately determined the proper risk premium
21 applicable to long-term treasury bonds, long-term corporate bonds, intermediate-
22 term treasury bonds and short-term treasury bills. In this way, the debt risk
23 premium method I present considers a wide array of data points across the yield
24 curve. In this way, the results are less impacted by a temporary imbalance that
25 may exist in the debt maturity "yield curve".

1 Q. EARLIER IN THIS SECTION OF YOUR TESTIMONY, YOU NOTED
2 THAT FEDERAL RESERVE CHAIRMAN GREENSPAN STATED THAT
3 THE FACT THAT EQUITY RISK PREMIUMS HAVE DECLINED “IS NOT
4 IN DISPUTE.” YOU ALSO PROVIDED SOURCES FROM FINANCIAL
5 LITERATURE CONCLUDING THAT THE RISK PREMIUM IS NOW LESS
6 THAN 4%. DO YOU HAVE ANALYTICAL SUPPORT TO
7 DEMONSTRATE THAT THE STATEMENTS BY CHAIRMAN
8 GREENSPAN AND FROM THE OTHER SOURCES YOU HAVE QUOTED
9 ARE CORRECT?

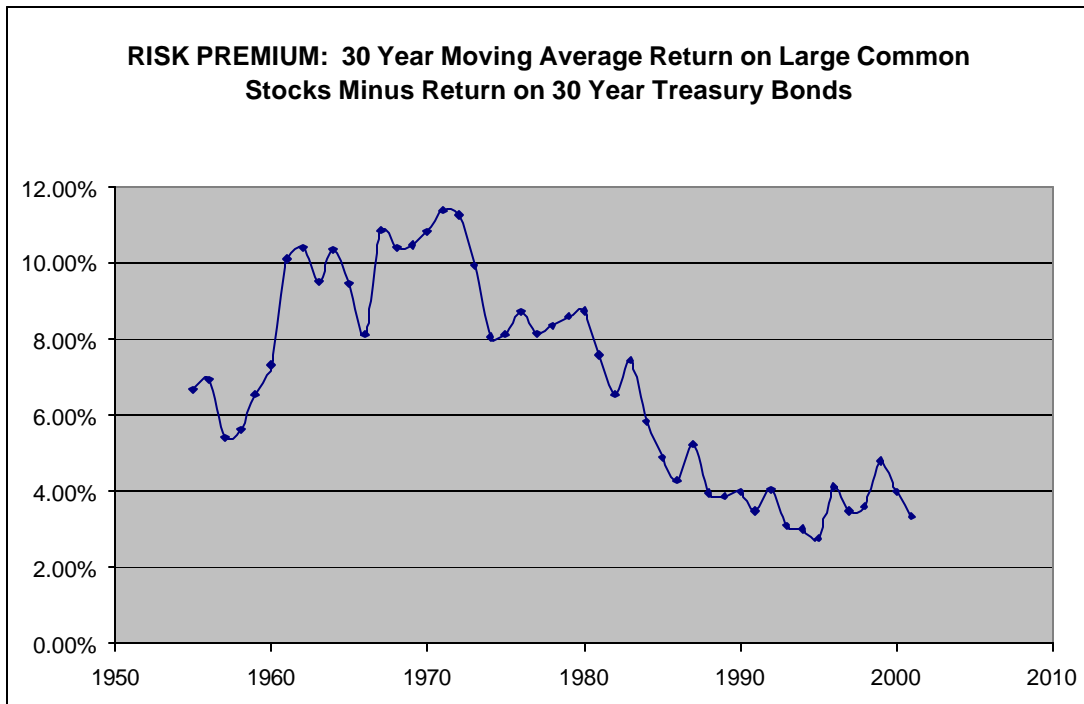
10 A. I examined the historic actual earned returns on common stocks and bonds from
11 1926 through 2001. But, rather than merely making one simplistic computation
12 that examined the entire time period with only one return number over the entire
13 period, I examined a 30-year moving average of the earned returns. 30 years is
14 long enough to see if indeed there is a trend to the earned returns, but not so short
15 as to be overly influenced by the natural volatility in earned returns that generally
16 occurs over just a year or a few years. As shown in the following graphs, the
17 decline in the risk premiums is persistent and undeniable.

18

1



2



3

4

5

6

7

8

An examination of the above graphs confirms that a risk premium over 30 year treasuries in the 3 to 4% range is appropriate. For my equity cost computations, I used the conservatively high estimate of 4.0% as the risk premium appropriate to add to U.S. treasuries when determining the cost of equity for an industrial

1 company of average risk. In applying the appropriate risk premium to interest rates
2 other than U.S. treasuries, I determined the average historic risk spread between
3 long-term treasuries and the other interest rate categories I examined. See JAR
4 Schedule 8, P. 2. This 4% risk premium was increased or decreased as warranted
5 by the historic data when applied to each of the separate interest rate categories to
6 which I applied the risk premium method.

7

8 Q. WHY HAVE YOU CHOSEN 30 YEARS TO SHOW THE DOWNTREND IN
9 THE RISK PREMIUM RATHER THAN A SHORTER TIME PERIOD SUCH
10 AS 10 YEARS?

11 A. 10 years is far too short of a time period to be able to observe the actual risk
12 premium based upon realized historic returns. The reason that realized returns over
13 a short time are not helpful at quantifying the risk premium is as follows. If the
14 equity risk premium declines, this means by definition that equity investors are
15 willing to settle for a lower risk premium component of the total return they are
16 demanding. If they are willing to settle for a lower return and if other things remain
17 equal, this means that investors are willing to pay a higher stock price for the same
18 future expected cash flow. What this means is that the initial reaction to a lowering
19 of the equity risk premium is for the stock price to rise. A rise in the stock price
20 results in a higher historic earned return; however at the same time the higher stock
21 price means the investor would expect a lower future return. Unless enough years
22 are used in the historic analysis to diminish the misleading impact of the initial
23 response to a reduction in the risk premium, the historic earned returns will not be
24 helpful. I am especially encouraged by the relative consistency of the trend in the
25 lowering of the risk premium as shown in the 30-year data. This reinforces the
26 likelihood that the risk premium has declined as Federal Reserve Chairman
27 Greenspan and many others have observed.

1

2 Q. ARE THERE REASONS WHY THE RISK PREMIUM HAS BEEN ON A
3 MULTI-DECADE DECLINE?

4 A. Yes. One important reason is a lowering of the U.S. capital gains income tax rate.
5 Investors are concerned about the total after-tax return earned. The majority of
6 the return earned by an investor on a long-term bond (and in many cases all of the
7 return earned by a long-term bond investor) is the interest income. Interest income
8 is fully taxed at regular income tax rates. This is in contrast to an investor in
9 common stocks. An investor in the average large common stock has received the
10 majority of their total return in the form of stock price, or capital appreciation.
11 Capital appreciation is not taxed at all until the stock is sold. Then, it is taxed at the
12 long-term capital gains rate if the stock has been owned long enough to be eligible
13 for such treatment. Currently, long-term capital gains are subject to a federal
14 income tax of no more than 20%. This is a considerably lower rate on long-term
15 capital gains than prevailed in prior decades.

16 Another important reason why the risk premium demanded by common
17 stock investors versus bond investors has declined is because enough years have
18 now passed since the Great Depression that a greater proportion of investors are
19 more comfortable owning common stocks than was the case when the memory of
20 the Great Depression was forefront in the minds of most investors.

21 Yet another factor is the proliferation of mutual funds. While it is debatable
22 whether the popularity of mutual funds is proof that the risk premium has declined
23 (because more investors are comfortable investing in common stock) or is the
24 reason that the risk premium declined (because mutual fund marketing has
25 increased the availability of investment funds for equity), it is nevertheless a relevant
26 factor.

1

2 Q. WHAT COST OF EQUITY IS INDICATED BY THE IMPLEMENTATION
3 OF THE RISK PREMIUM/CAPM METHOD IN THIS CASE?

4 A. As shown in JAR Schedule 2, the cost of equity indicated by the risk
5 premium/CAPM method is between 8.94% and 10.00%.

6

7 Q. YOU HAVE PRESENTED RISK PREMIUM DATA USING THE
8 GEOMETRIC AVERAGE RESULTS. HAVE YOU SEEN WITNESSES
9 PRESENT DATA USING ARITHMETIC AVERAGE RESULTS?

10 A. I have seen some company cost of capital witnesses present risk premium data
11 based upon using an arithmetic average, rather than a geometric average.
12 However, the arithmetic average method is mathematically flawed. If it were used,
13 it would result in a substantial overstatement of the cost of equity. As will be
14 explained in detail later in this section of my testimony, textbooks, the U.S.
15 Securities and Exchange Commission (SEC), and Value Line have all recognized
16 that the only proper way to measure long-term historic actual earned returns is to
17 use the geometric mean. The arithmetic mean is specifically identified has been
18 singled out by several numerous sources as a method that will specifically result in
19 an answer whose absolute value is upwardly biased. The arithmetic average of
20 returns is computed by taking the percentage change over a specific period⁵², and
21 computing an arithmetic average of those returns. The geometric average is
22 computed by determining the compound annual average return from the beginning
23 of the period to the end of the period being examined.

24

⁵² Frequently arithmetic average returns are computed based upon annual results. However, arithmetic returns could be computed using any other time – daily, weekly, monthly, every two years, every 5 years, etc. and then converting that result to an average annual return.

1 Q. PLEASE EXPLAIN WHY YOU HAVE CONCLUDED IT IS IMPROPER TO
2 DEVELOP A RISK PREMIUM BASED UPON HISTORIC ARITHMETIC
3 RETURNS?

4 A. Arithmetic average returns overstate (on an absolute value basis) the actual returns
5 received by investors. The more variable historic growth rates have been, the more
6 the method exaggerates actual growth rates. Arithmetic average returns ignore the
7 impact of compound interest. For example, if a company were to have a stock
8 price of \$10.00 in the beginning of the first year of the measurement period and a
9 \$5.00 stock price at the end of the first year, an arithmetic average approach would
10 conclude that the return earned by the investor would be a loss of 50% [$(\$5 - \$10)/(\$10)$]. If, in the second year, the stock price returned to \$10.00, then the
11 arithmetic average would compute a gain of 100% in the second year [$(\$10 - \$5)/(\$5)$]. The arithmetic average approach would naively average the 50% loss in
12 the first year with the 100% gain in the second year to arrive at the conclusion that
13 the total return received by the investor over this two year period would be 25%
14 per year [$(-50\% + 100\%)/2$ years]. In other words, the arithmetic average
15 approach is so inaccurate that it would conclude the average annual return over this
16 two-year period was 25% per year even though the stock price started at \$10.00
17 and ended at \$10.00.⁵³ The geometric average would not make such an error. It
18 would only consider the compound annual return from the beginning \$10.00 to the
19 ending \$10.00, and correctly determine that the annual average of the total returns
20 was not 25%, but was zero.
21
22

⁵³ The same would be true had the stock ended the first year at a price of \$20, then returned to a price of \$10 at the end of the second year. In that case, the arithmetic mean would also suggest an average annual return of 25%, when it is self-evident that the average annual return is zero, the exact result produced by use of the geometric mean.

1 In order to protect investors from misleading data, the United States
2 Securities and Exchange Commission (“SEC”) requires mutual funds to report
3 historic returns by using the geometric average only. The arithmetic average is not
4 permitted. The geometric average, or SEC method, has the compelling advantage of
5 providing a true representation of the performance that would have actually been
6 achieved by an investor who made an investment at the beginning of a period and
7 re-invested dividends at market prices prevailing at the time the dividends were
8 paid.

9

10 Q. DOES THE FINANCIAL COMMUNITY COMPUTE HISTORIC ACTUAL
11 ACHIEVED RETURNS BASED UPON ARITHMETIC MEANS OR
12 GEOMETRIC MEANS?

13 A. The financial community (as represented by reflected in articles from The Wall
14 Street Journal and from Business Week that are specifically quoted in this
15 testimony) refers to geometric averages when evaluating historic returns.
16 Additionally, page 92 of the August 16, 1999 issue of Fortune magazine refers to
17 the return that is equal to the geometric mean from Ibbotson Associates as “...the
18 oft-quoted calculation...” of historic actual returns on common stocks. The article
19 does not even mention the number that is equal to the historic arithmetic return.

20

1 Q. DO FINANCIAL TEXTBOOKS SUPPORT THE USE OF THE
2 GEOMETRIC AVERAGE FOR COMPUTING HISTORIC ACTUAL
3 RETURNS?

4 A. Yes. For example, the textbook Valuation. Measuring and Managing the Value of
5 Companies, by Copeland, Koller, and Murrin of McKinsey & Co. , John Wiley &
6 Sons, 1994, provides what is essentially the identical example to the one I
7 presented earlier, but it does so specifically in a description of how to use the
8 Ibbotson Associates data. The textbook gives a similar example to the one I
9 explained earlier in this section of my testimony, when it states the following on
10 pages 261-262:

11 We use a geometric average of rates of return because arithmetic
12 averages are biased by the measurement period. An arithmetic
13 average estimates the rates of return by taking a simple average of the
14 single period rates of return. Suppose you buy a share of a
15 nondividend-paying stock for \$50. After one year the stock is worth
16 \$100. After two years the stock falls to \$50 once again. The first
17 period return is 100 percent; the second period return is -50 percent.
18 The arithmetic average return is 25 percent $[(100 \text{ percent} - 50$
19 $\text{percent})/2]$. The geometric average is zero. (The geometric average is
20 the compound rate of return that equates the beginning and ending
21 value.) **We believe that the geometric average represents a**
22 **better estimate of investors' expected returns over long periods**
23 **of time.**

24

1 (Emphasis added)⁵⁴

2 Note that the Copeland who was one of the authors of the above
3 statement is also Tom Copeland, the name on the article cited by Dr. Vander
4 Weide in Attachment B of his direct testimony.

5 In another textbook discussion that specifically addresses the use of the
6 Ibbotson data, Financial Market Rates & Flows, by James C. Van Horne,
7 Prentice Hall, 1990, states the following on page 80:

8 The geometric mean is a geometric average of annual returns, whereas the
9 arithmetic mean is an arithmetic average. For cumulative wealth changes
10 over long sweeps of time, the geometric mean is the appropriate measure.

11

12 The textbook Investments by Nancy L. Jacob and R. Richardson Pettit,
13 Irwin, 1988, puts it well when it says:

14 The existence of uncertainty as reflected in a distribution of possible values
15 makes the **expected value**, or arithmetic average rate of return, a misleading
16 and biased representation of the wealth increments which will be generated
17 from multiperiod investment opportunities.

18 The average annual rate of wealth accumulation over the investment period,
19 termed the **average annual geometric rate of return**, correctly measures
20 the average annual accumulation to wealth when multiple periods are involved.

21

22 (Emphasis is contained in the original)

23 Q. WHAT HAS VALUE LINE SAID ANYTHING REGARDING THE USE OF
24 AN ARITHMETIC AVERAGE OR A GEOMETRIC AVERAGE?

⁵⁴ Note that the Copeland who was one of the authors of the above statement is the author of the article relied upon by Dr. Vander Weide in Attachment B of his direct testimony.

1 A. Yes. On May 9, 1997, Value Line issued a report entitled “The Differences in
2 Averaging”. This report was contained on pages 6844-6845 of the “Value Line
3 Selection & Opinion” portion of its weekly mailings to subscribers. This report
4 says that:

5
6 (t)he arithmetic average has an upward bias, though it is the simplest to
7 calculate. The geometric average does not have any bias, and thus is the
8 best to use when compounding (over a number of years) is involved.

9
10 The Value Line report then goes on to provide examples that show why
11 the arithmetic average overstates the achieved returns while the geometric average
12 produces the correct result. A complete copy of this Value Line discussion is
13 included with this testimony as Appendix B.

14 Ibbotson Associates has also said in the past that it is the geometric
15 average that is “the correct average to compare with a bond yield.”⁵⁵. More
16 recently, since after Dr. Ibbotson began testifying as a cost of capital expert for
17 telecommunications companies, he began arguing for the use of an arithmetic
18 average. In his Valuation Edition 2002 Yearbook of Stocks, Bonds, Bills, and
19 Inflation, he presents an example to illustrate why he supports the use of the
20 arithmetic average. This example appears on page 73. However, Dr. Ibbotson’s
21 example is invalid because it heavily relies on two assumptions that are incorrect.
22 One assumption is that investors have the same amount invested every year, and
23 the other is that each year’s performance is independent of the prior year’s
24 performance.

⁵⁵ Page 75 of Stocks, Bonds, Bills, and Inflation 1986 Yearbook.

1 Dr. Ibbotson's implied assumption that the same amount is invested in each
2 year is the same. In reality, it is not. Anyone who doubts investments are not equal
3 only needs to consider the behavior of the NASDAQ in recent years. Those
4 investors whose retirement accounts were heavily invested in the tech stocks of the
5 NASDAQ have declined substantially in value. The NASDAQ index reached an
6 all time high of 5,132.52 in March 2000. The high for the NASDAQ was
7 2,243.78 in March 2001, and the high for the NASDAQ in March 2002 was
8 1,946.23. As I write this testimony today, the NASDAQ index is 1,330. There
9 are millions of investors who are disappointed about this because they lost a
10 considerable amount of their savings. If an investor had carefully saved for years
11 so that he or she had accumulated \$100,000 in their retirement account as of
12 March 2000, if it were invested in the NASDAQ, the investment would have
13 declined to about \$43,716.93 in March 2001, to about \$37,919.58 by March
14 2002, and would be currently worth only \$25,913.20. In order for this all-too-
15 common, but very unfortunate investor to get back to where he or she was in
16 March 2000, the NASDAQ would now have to grow from its current level of
17 1,330 all the way back to 5,132.52. This "recovery" would require a gain of
18 286%. The percentage loss experienced by this investor was 56.28% from March
19 2000 to March 2001, and was another 13.26% from March 2001 to March
20 2002, and was another 31.66% from March 2021 to present. If these three
21 returns are combined using the arithmetic average, then the investor would say he
22 or she lost a combined total of 101.2% in the roughly 2 ½ years since March
23 2002, for an average loss of 40.48% per year. 101.20% in the roughly 2 ½ years
24 since March 2002. This is, of course, a ridiculous conclusion because as bad as
25 the losses were to this poor investor, the investor still has \$25,913.20 remaining
26 out of the original \$100,000. Note that from the perspective of the inherently flawed
27 arithmetic average method, the percentage gain to get back to 5,132 is over twice

1 as high as the percentage losses. Yet, based upon the arithmetic average method,
2 the investor would have lost more than the original investment. Also note that the
3 arithmetic average averages the total losses in the period that are greater than
4 100%. Were losses really greater than 100%, no even though they were from the
5 perspective of the number that the arithmetic average uses as the sum of the losses
6 when computing the average. What is wrong with the arithmetic average? Simply,
7 by putting everything in terms of annual averages rather than absolute numbers, the
8 method incorrectly and unrealistically assumes that the investor had the same dollar
9 amount invested in each period. Yes, our hypothetical investor would have lost
10 101.20% of the original investment if he or she had replaced each year's lost funds
11 by reinvesting into the retirement account. For most people, they simply do not
12 have the extra money to make the reinvestment possible.

13 The absurd result from using the arithmetic averaging technique in a realistic
14 real world example should be taken one step further. Suppose the NASDAQ
15 should stage a remarkable rally and recover to its old high by March 2003 (no,
16 virtually no one expects this, as the NASDAQ bubble is now a generally accepted
17 phenomena). If it should stage such a recovery, the gain in the NASDAQ from
18 March 2002 to March 2003 would be 163.72%. The investor who went through
19 this roller coaster ride would have started with \$100,000 and ended with
20 \$100,000. The geometric averaging method would correctly recognize that the
21 annual average return received by this investor was zero even though it felt like a
22 wild roller-coaster. The user of the arithmetic average method would average the
23 56.28% loss with the 13.26% loss and the 163.72% gain to reach the incorrect
24 conclusion that the investor achieved a return of 77.75% per year even though the
25 investor started out with \$100,000 and ended up with \$100,000. Note that this
26 example only varies in concept from the erroneous one presented by Dr. Ibbotson
27 in his book is that it recognizes it is not proper to assume that an investor starts out

1 at the same dollar level of investment each year. In the real world, investors tend to
2 invest more and more in the stock market when it goes up, and tend to panic and
3 cash in their investments when the markets go down. This real world reaction is
4 exactly the opposite of what would have to be done in order for investors to
5 achieve the arithmetic average results. In the real world, many people sell their
6 investments when stocks are down and miss out totally on the rise, while others do
7 add to their investment. Furthermore, in an up market, the amount invested gets
8 bigger each year, as investors tend not to take their gains “off the table,”
9 Moreover, in a down market, the amount invested decreases, since investors tend
10 not to replenish their declining investment so as to restore the dollar amount to
11 where it was. Since in aggregate investors cannot and do not outsmart “the
12 market”, the only proper way to examine the return in multiple periods, whether
13 those returns are historical or prospective, is to consider the geometric average
14 return.

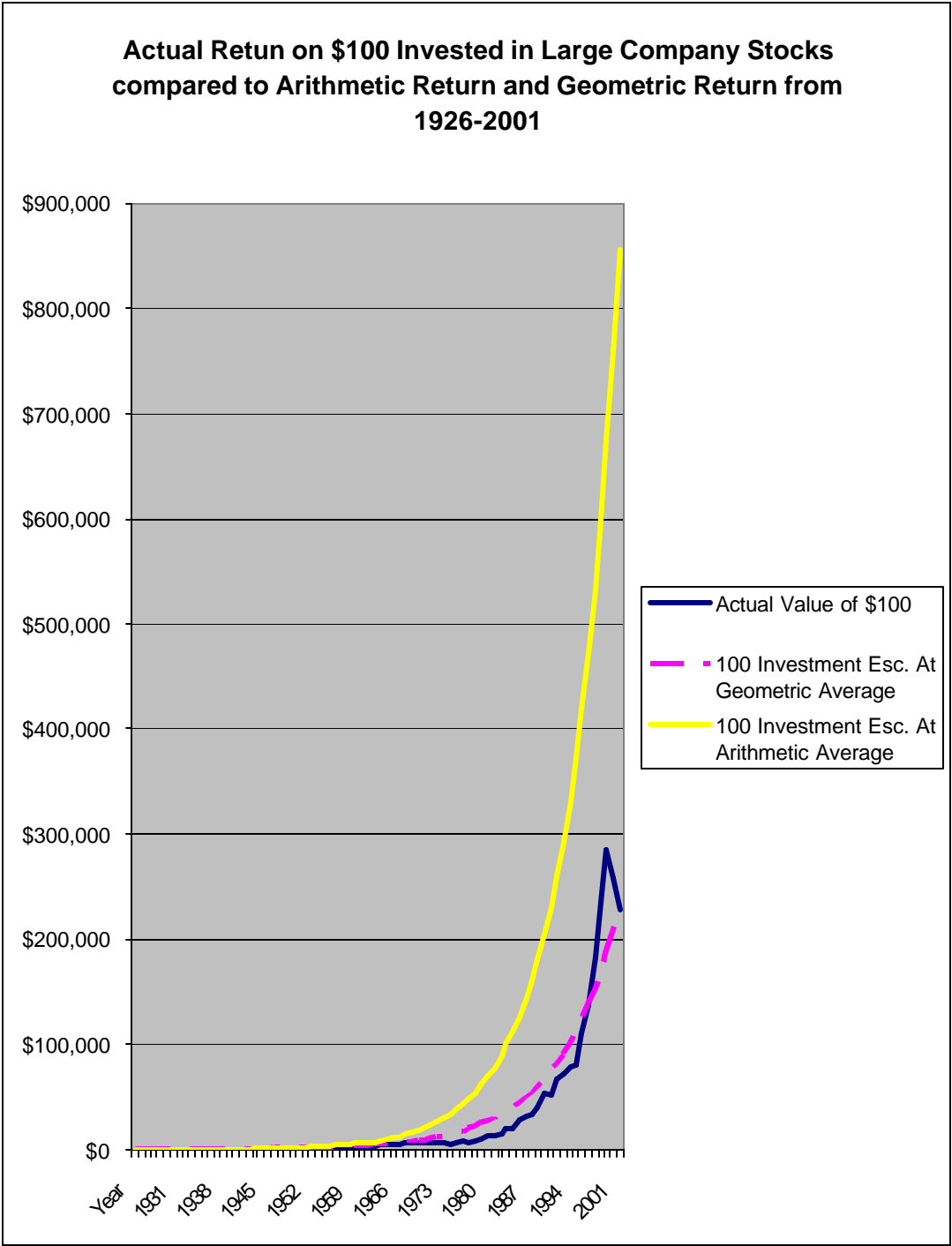
15
16 Q. HAVE YOU COMPARED GRAPHICALLY THE CAPITAL
17 APPRECIATION GROWTH RATE USING THE ARITHMETIC AVERAGE
18 METHOD WITH THE CAPITAL APPRECIATION GROWTH RATE THAT
19 IS OBTAINED USING THE SEC METHOD?

20 A. Yes. In the following graph I show the actual movement of the S&P Utility index
21 from 1928 through 1998. I also show how the index would have behaved on a
22 year-by-year basis using the average growth obtained from the SEC method and
23 using the arithmetic average historic growth rate methodology. The graph illustrates
24 that arithmetic average calculation of historic actual returns deviates at an ever-
25 increasing rate over time from the actual S&P Utility Index, overstating the total
26 return from 1928-1998 by almost 400%. By contrast, the historic actual returns
27 computed using the SEC method is a dramatically more reasonable track of the

1 growth of the S&P utility over time and thus is a better measure of historic actual
2 return rates realized by investors. In the following chart, the actual return on the
3 Large Common Stocks is the line towards the bottom of the graph that is not
4 smooth, the line towards the bottom of the graph that is near the actual return line is
5 the geometric return on the Large Common Stocks and the line that is much higher
6 than the other two lines is the arithmetic

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return.



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In the above chart, the top line shows that if \$100 had been invested in public large common stocks in 1926 through 2001 and had earned the arithmetic return, the \$100 would have grown to over \$800,000. The lower irregular line shows what actually would have happened to a real \$100 investment if it had been invested in public utility common stocks. As shown on the graph, the \$100 investment would have actually grown to about \$225,000. While the increase from \$100 to \$225,000 is a very sizeable return, it is far less than the \$800,000 return that would have been achieved if the arithmetic return methodology had been achieved. The smooth line that ends at the same place as the actual return line is the ongoing value of \$100 invested in 1926 that grew at the geometric return rate. Note that the \$100 invested at the geometric return rate is, by 2001, exactly equal to the actual return. Therefore, the geometric return accurately measures the actual return that was achieved from 1926 through 2001, but the arithmetic average return exaggerates the actual return by more than 3 times.

- Q. HOW MUCH HIGHER IS THE RISK PREMIUM DIFFERENCE BASED UPON AN ARITHMETIC AVERAGE THAN IT IS BASED UPON A GEOMETRIC AVERAGE?
- A. From 1926 to 2001, the arithmetic average method produced an indicated risk premium that was about 2.5% higher for large company stocks versus long-term corporate bonds than the risk premium indicated by using the SEC, or geometric average method.

**RISK PREMIUM/CAPM METHOD
COST OF EQUITY FOR COMMON STOCK :**

Schedule JAR 8, P. 1

	Average Risk	Risk Premium Adjustment	Applicable to RBOC Beta of 0.97 [G]
<i>Based on Long-term Treasury Bonds</i>			
Interest rate on 20 year treasury bonds	5.11% [A]		5.11%
Applicable Risk Premium	4.00% [B]	-0.13% [F]	3.87%
	9.11%		8.98%
<i>Based on Corporate Bonds</i>			
Interest on corporate bonds	5.55% [C]		5.55%
Applicable Risk Premium	3.51% [B]	-0.12% [F]	3.39%
	9.06%		8.94%
<i>Based on Intermediate Term U.S Treasury Bonds</i>			
Interest on 10 year U.S. Treasury Bonds	3.38% [D]		3.38%
Applicable Risk Premium	3.90% [B]	-0.13% [F]	3.77%
	7.28%		7.15%
<i>Based on U.S. Treasury Bills</i>			
Interest on 90 day U.S. Treasury Bills	0.85% [E]		0.85%
Applicable Risk Premium	5.33% [B]	-0.18% [F]	5.16%
	6.18%		6.01%
SUMMARY OF INDICATED RISK PREMIUM FOR EQUITY WITH AVERAGE RISK			
Lowest	6.18%		6.01%
Highest	9.11%		8.98%
Average	7.91%		7.77%

Sources:

- [A] Wall Street Journal, 1/2/04. Used Maturity Date Of November 2024
- [B] JAR 8, P. 2
- [C] Federal Reserve Statistical Release, 1/2/04 AAA Rated. Week Ending December 26th rate.
- [D] Wall Street Journal, 1/2/04. Used Maturity Date of August 2014
- [E] Wall Street Journal, 1/2/4. Used Maturity Date of March 2004
- [F] Amount in last column determined by multiplying the amount in the first column by the beta.
The amount in the middle column is the difference between the amount in the first column and the amount in the last column. Used AAA Corporate bonds.
- [G] JAR 3, P3. Average Beta of All RBOCS

**RISK PREMIUM BASED UPON ANALYSIS OF
HISTORIC RETURNS**

JAR 8, P. 2

Compound annual returns from 1926 through 1999:

Large Common Stocks	11.35%
Corporate Bonds	5.61%
Long-term U.S. Treasury Bonds	5.12%
Intermediate Term U.S. Treasury Bonds	5.22%
U.S. Treasury Bills	3.79%
Inflation	3.07%

Average difference from Long-term U.S. Treasury Bonds:

Large Common Stocks	6.23%
Corporate Bonds	0.49%
Long-term U.S. Treasury Bonds	0.00%
Intermediate Term U.S. Treasury Bonds	0.10%
U.S. Treasury Bills	-1.33%
Inflation	-2.05%

Common Stock Risk Premium Consistent With Current Market Environment:

Long-term U.S. Treasury Bonds	4.00% or less.	See graph on Schedule JAR 11, P. 3.
Corporate Bonds	3.51% or less.	Risk premium on large common stocks minus average difference from corporate bonds per above table.
Intermediate Term U.S. Treasury Bonds	3.90% or less.	Risk premium on large common stocks minus average difference from corporate bonds per above table.
U.S. Treasury Bills	5.33% or less.	Risk premium on large common stocks minus average difference from corporate bonds per above table.
Inflation	6.05% or less.	Risk premium on large common stocks minus average difference from corporate bonds per above table.